# Watermist Fixed Fire Suppression Systems

**Fire Systems**
Prevent Fire | Detect Fire | **Contain Fire** | Escape Fire

Product

## Watermist Fixed Fire Suppression Systems

Water Mist systems provide safe fire protection for occupied spaces and critical assets using water, the most natural of substances, deployed as a highly efficient very fine water spray.

Benefits

**A Water Mist system is a means of fire protection utilising 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.**

The 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. The use of water as a fine mist from standalone systems provides a highly efficient means of fire protection requiring considerably less agent than is associated with traditional deluge and spray systems. This results in substantial system capacity and weight benefits as well as causing usually negligible secondary water damage in the protected zone.

Water Mist achieves fire extinction through a number of processes:

- Flame quenching by reduction of the flame temperature to a level where the combustion radical chain reactions cannot be sustained
- Cooling of burning materials and potential fuel sources to below auto-ignition temperatures

Water Mist offers the additional benefits of thermal radiation attenuation, removal of a proportion of airborne smoke particulates and the absorption of water-soluble toxic and irritant gases. It is a clean agent suitable for a range of sensitive applications and where people are involved.

Water Mist systems are offered as standalone packages having agent capacities of 50-2000 litres suited to a wide range of petrochemical/ offshore and general industrial applications.

# Watermist Fixed Fire Suppression Systems

## Technical Data

### Critical Data

| | |
|---|---|
| Chemical formula | $H_20$ |
| Weight | varies according to design concentration |
| Volume | varies according to design concentration |
| Operating pressure | varies but normally very high |
| Minimum design concentration | N/A |
| Minimum discharge time | varies according to risk |
| Extinguishing mechanism | Physical |
| NOAEL | N/A |
| LOAEL | N/A |
| Ozone Depleting Potential | N/A |
| Global Warming Potential | N/A |
| Atmospheric Lifetime | N/A |

### System Design Features

- Highly efficient fire suppression performance with minimal water usage
- System capability backed by comprehensive full scale test programmes
- Compact modular systems designed with simple interface connections
- System functions as integral part of existing or new supply detection and control systems
- Automatic/manual control according to requirements
- Low costs of ownership
- Water vessel designed and stressed in accordance with relevant national standards.
- Propellant cylinder designed in accordance with EEC 84/525 or equivalent
- Gas is pressure-regulated to maintain optimum performance characteristic throughout discharge
- Application-specific spray manifold design based on fire risk analysis
- Single fluid low pressure nozzles offer optimum droplet size, flow rate and spray coverage characteristics
- Small bore distribution pipework for low cost and ease of installation
- System flow analysis carried out using computer-based hydraulics program

### Optional Features

- IP-rated equipment and flame/explosion proof components
- Skid or field-mounted timer unit for programmed discharge sequence
- Multiple risk protection by concurrent discharge into several zones or by selective discharge using distribution valves
- Water level determined visually or by remote monitoring
- High pressure switch offers confirmation of system discharge
- Low pressure switch ensures constant monitoring of stored gas pressure
- System test facility with water diverted to drain
- Weatherproofed and frost protected cabinets for exposed locations
- Low concentration film-forming foam additive

### Advantages

- Environmentally friendly and Non-toxic
- May be used in occupied areas
- Low agent cost
- No decomposition products
- Requires less water than traditional sprinkler and deluge and spray systems
- Highly efficient fire suppression capability
- Minimal space and weight requirements

### Disadvantages

- Conductive and corrosive
- Possible damage to protected risks, building & furnishings
- Clean up required
- High storage pressures
- Not invasive like a vapour or gas and therefore not really effective on complex risks such as EDP area