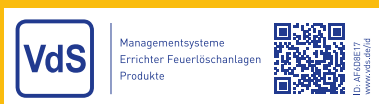


Mining | Construction | Tunnel Drilling | Forestry | Agriculture | Heavy Equipment

# Revolutionary Fire Suppression Systems



Made in Germany



SP Method 4912:2019  
SBF 127:17  
E1 - UNECE R107  
DMT / TÜV Nord Approval  
ISO 9001:2015  
CE

## detexline 4MC

**ROBUST - PATENTED - UNIQUE!**  
The need for simplicity and robustness makes  
Detexline 4MC the leading solution for  
Heavy Machinery Fire Suppression



**Designed for:**  
Mining vehicles  
Construction vehicles  
Tunneling machinery  
Defense vehicles  
Forestry machinery  
Agricultural machinery  
Construction machinery

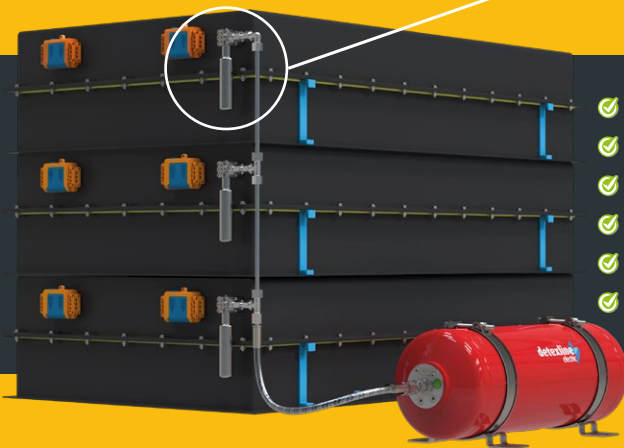




# Smart Fire Suppression for Batteries

Innovative Protection for Multiple Battery Packs

SPY.P



- ✔ Quick battery connection
- ✔ Detection, extinguishing, and directional valve - All in one unit!
- ✔ Thermo-pneumatic activation
- ✔ Directional valve system – extinguishes only where the fire is
- ✔ No electricity required
- ✔ Virtually maintenance-free



Fluorine Free  
**TiboRex**  
ABSOLUTE

Temperature  
Detection



Battery  
Flooding

rapid cooling



SPY.P

spy-p is the new form of individual protection for Lithium batteries.

This innovative system combines detection, suppression, and a **directional valve**. This makes it possible to identify exactly where the fire is located and direct the extinguishing agent exclusively to the affected cell.

When activated, it targets only the compromised battery cell, leaving other batteries and surrounding systems unaffected. By flooding the affected cells, it provides cooling and prevents the fire from spreading to adjacent batteries.

The system is designed to create the necessary time window for a fire brigade to intervene safely after activation, protecting surrounding equipment and reducing risks during firefighting operations.



# Fully Pneumatic - Self Contained

## Fine Spray Nozzles

- Patented
- 75° angle spraying
- Robust and precise
- Stainless steel
- Very small and fits virtually anywhere

## SPY - Thermo-pneumatic detector

- Patented
- Multiple temperature ranges
- Sensitive to hidden fires
- Robust and accurate
- Stainless steel

## Stainless Steel Container

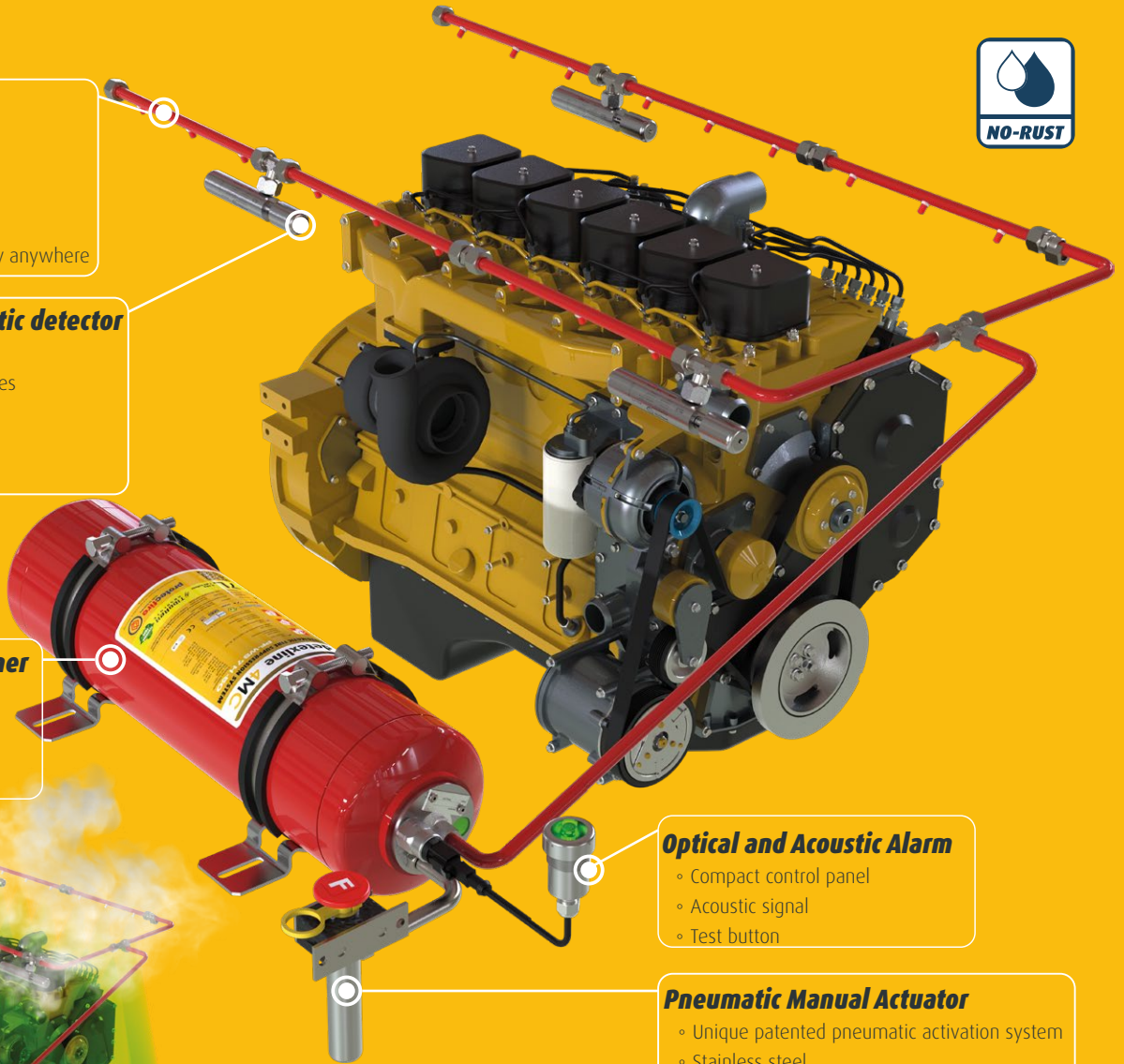
- Safe and robust
- Internal activation system
- Maintenance free
- Stainless steel

## Optical and Acoustic Alarm

- Compact control panel
- Acoustic signal
- Test button

## Pneumatic Manual Actuator

- Unique patented pneumatic activation system
- Stainless steel
- Safety locking system
- Argon gas activation



Special Liquid Extinguishing Agent



WET CHEMICAL AGENT  
ACCORDING TO  
NFPA 17-A



Watch the video



### ✓ LIQUID FIRES

Fuel, lubricant, hydraulic fluids, grease

### ✓ SOLID FIRES

Plastic, rubber, wood, sawdust, wires, cables

### ✓ ELECTRICAL FIRES

Electrical cabinets, substations, transformers and other equipment



### Single-Line System (detex)

Detection and extinguishing combined in a single pipeline for simplicity and reliability.



### No Pressure

Both the agent container and tubing remain pressure-free under stand-by mode, ensuring maximum safety and durability.



### No Electricity

Works without any power supply, ensuring reliability even in complete electrical failure.



### 5 Years - No Parts Change

Durable and resistant system with long-term savings: no component replacements needed for 5 years.



### Ultra-Fast Detection

Response speed: Ultra Fast Response RTI 12. False alarm proof. Activation is based on "temperature" parameter for pneumatic activation.



### Operation Temperature Range: -50°C to +80°C

Standard operation from -30°C to +80°C. With special nozzles, the system remains fully reliable even in extreme cold down to -50°C.



### Capable of Working in Extreme Conditions

Built to withstand shock, vibration, and demanding off-road conditions, ensuring dependable operation when it matters most.



### Stainless Steel

Manufactured with high-precision stainless steel, ensuring exceptional durability and resistance.



### Very low Maintenance

Thanks to its simple, pressure-free design, maintenance is reduced to basic visual inspections.



### Fully Mechanical / Pneumatic

The entire system is self-contained. It does not require manual operations and does not depend on external controls, such as control panels or electrical detectors.

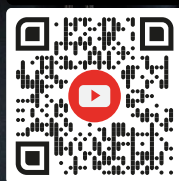
Possibility of multiple temperature ranges in a single system:  
57°C | 68°C | 79°C | 93°C | 110°C | 141°C | 182°C | 230°C | 260°C

Fully operational even in highly ventilated environments and open spaces.



**Can be installed in Any Position/Angle**

Watch the video



**TiboRex**  
ABSOLUTE

**Extinguishing Agent**

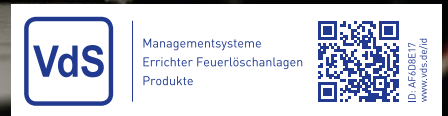
**Fluorine Free**

**Liquid - TiboRex Absolute**



# detexline 4MC

## Long-Term Savings



SP Method 4912:2019  
 SBF 127:17  
 E1 - UNECE R107  
 DMT / TÜV Nord Approval  
 ISO 9001:2015  
 CE

Factors that make detexline the most economical system:

### Almost maintenance-free for 5 years:

No need for the usual annual maintenance as it is not pressurized!

### No False Alarms:

Patented, accurate and reliable detection system.

### Durable Material Construction

All essential equipment components are crafted from stainless steel.

## How it Works

The detexline tank and piping are not pressurized.

The SPY detectors will be activated by thermal detection, thus releasing the pressure in the pipeline and cylinder control valve, which in turn will trigger the release of the extinguishing agent.

Fine spray nozzles will disperse the Tiborex Absolute providing the cooling effect and effectively extinguishing fires within the first few seconds.

It can be manually activated remotely.

An alarm and test button can be installed.

Name	detexline 4MC
Temperature Range	-50°C / -30°C to 80°C
Detection Technology	Rise of Pressure
Detection and Extinguishing Line	One integrated line
System Pressure	No pressure
Detection Technology	SPY detection element - Stainless steel
Trigger Temperature	Glass ampoule, 9 independent temperatures
Lifecycle of Detectors	5 years
Nozzle Type	S1
Extinguishing Agent	Tiborex Absolute
Extinguishing Agent Volume	4, 7, 14, 24L
Extinguishing Technology	Fine spray technology
Extinguishing Container (pressure)	Pressureless (Sealed Cartridge)
Product Material	Stainless steel
Alarm Signal Switch	Yes
Maintenance Inspection	Annually
Parts Replacement Duration	5 years

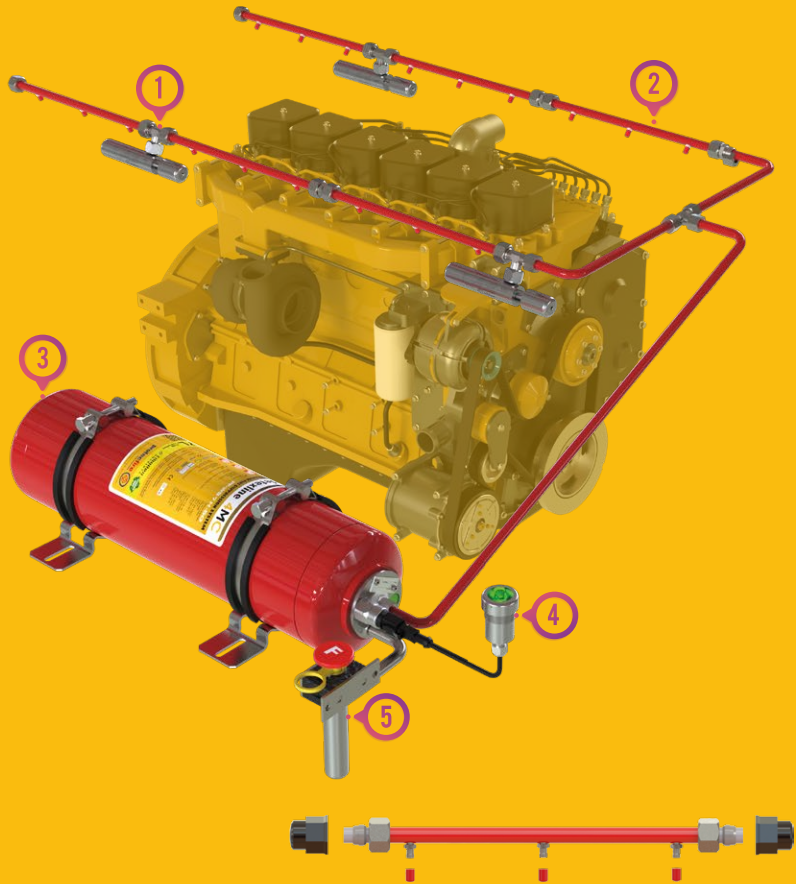
### Certifications and Approvals

- **SP Method 4912:2019** Tested and approved for fire safety and environmental resistance according to SP Method 4912:2019. Includes detexline.
- **SBF 127:17** (vehicles with internal combustion engines - construction, forestry, heavy machinery).
- **E1 - UNECE R107** (No 107 R-080052) KBA certified in Germany.
- **DMT / Tüv-Nord Approval** (underground and surface mining in Germany, File No. 62.07-2.11-2009-16, Bezirksregierung Arnsberg).
- **ISO 9001:2015** (Vds certified manufacturing, No. S 803074).
- **CESMEC Validation** - Validated for fire suppression system and agent (Protectfire/TiboRex). Includes detexline for mining vehicles (No. SCA-43613/43614, based on DMT/MPA).
- **CE Marking** (EU directives compliance).



## System components

Watch the video



detex 360° version



Watch the video



### 1 SPY thermo-pneumatic detector

- Unique patented detector
- No electricity required
- High-finish stainless steel
- Response speed: Ultra Fast Response RTI 12
- Available detection temperatures:
  - -57°C -68°C -79°C -93°C -110°C -141°C -182°C -230°C 260°C

Watch the video



### 2 Fine-Spray Nozzles

- Unique patented nozzle solution
- Quick and easy to install - Reduces installation time by ~70%.
- Very small - Virtually fits anywhere
- Stainless steel
- Fine spray technology
- Up to 75° spray pattern
- High quality nozzle caps

Watch the video



### 3 Extinguishing Agent Tank

- Patented - Unique Pneumatic Release System
- Can be placed in any position!
- Stainless steel with electrostatic paint finish Ra3000
- Patented - Stainless steel actuation system
- Liquid Agent: Tiborex Absolute - exclusive protectfire agent
- Effective against liquid, solid and grease fires.

Watch the video

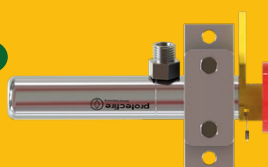


### 4 Optical and Acoustic Alarm

- Compact control panel
- Acoustic signal
- Test button
- Led light

### 5 Pneumatic Manual Actuator

- Unique patented pneumatic activation system
- Stainless steel
- Safety locking system
- Argon gas activation



WET CHEMICAL AGENT  
ACCORDING TO

**NFPA 17-A**



**TiboRex**  
ABSOLUTE



WET CHEMICAL AGENT  
ACCORDING TO  
**NFPA 17-A**

ultra fast extinguishing

## Extinguishing Agents Comparison

	TiboRex Absolute	Water	Foam	Powder	Gas
Fast Temperature Reduction	+	-	-	-	-
Surface Blanketing	+	-	+	-	-
Quenching Effect	+	-	+	-	+
Fine-Spray Technology	+	+	-	-	-
Fluorine Free	+	+	-	-	+
Temperature Range -50°C to +80°C	+	-	-	+	-
Danger to Persons	+	+	-	-	-

### Ultrafast extinguishing

Only small amounts of extinguishing agent required. Tiborex rapidly delivers a huge cooling power. The object to be protected remains almost undamaged.

### Ultrafast cooling

Enormous reduction of surface temperature. Avoidance of re-ignition. Reduced effect of fire. Quick interruption of combustion process.

### The Cooling Effect

The impressive cooling effect of Tiborex Absolute is predominantly hinged on two fundamental physical attributes:

### Quenching effect

Rapid removal of thermal energy therefore removing heat, hence no combustion or fire in hidden cavities.

### Blanketing fat and oil fires

When mineral, animal or vegetable fats and oils burn, Tiborex Absolute uses chemical reactions to form a closed, gas-proof protective layer quenching the fire and protecting the hot fat or oil from re-ignition by cooling them down very quickly.

**Water Evaporation-Driven Cooling:** Tiborex Absolute employs specially developed fine-spray nozzles that release the extinguishing agent in droplets smaller than 100µm. This design ensures ultra-rapid evaporation of the liquid component within the extinguishing agent. By utilizing the necessary enthalpy of evaporation, which stands at 2.26 MJ/kg (equivalent to the energy required to evaporate 1 liter of water), energy is swiftly extracted from the burning object. This process results in a significant and prompt reduction in temperature.

### Residue monitoring and guaranteed quality

Residues of the extinguishing agent on the object can be identified with the help of ultraviolet light. A chemical analysis (DNA) can verify and confirm that the original Tiborex Absolute was used.

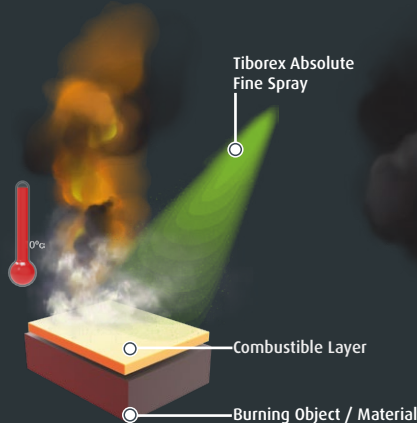
### Environmental friendliness

Ecological and 100% fluorine-free extinguishing agent. Biodegradable. Non toxic to humans and animals.

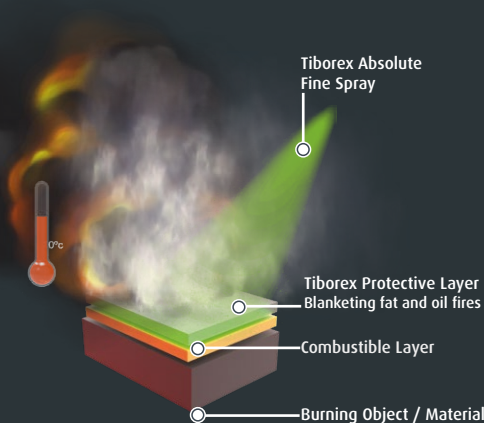
**Sublimation-Induced Cooling:** As the aqueous phase evaporates, certain key constituents within Tiborex Absolute form crystalline structures. Operating within the existing combustion temperature, these solid structures transition from the crystalline phase to a gaseous state. This phase transition necessitates a substantial enthalpy of evaporation, equivalent to 7.23 MJ/kg of heat.

## 3 stages fire suppression

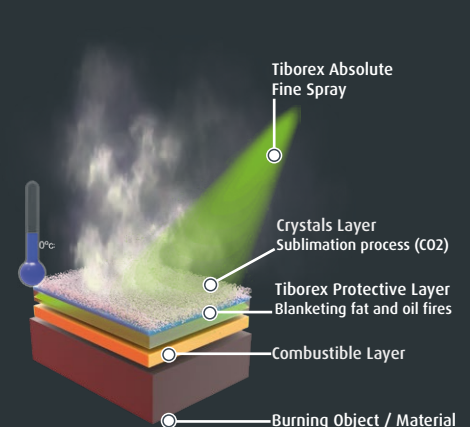
### 1 Cooling Effect Fine Spray Droplets that penetrate fire



### 2 Oxygen Suffocation by evaporation



### 3 Ultra Cooling through Sublimation Layering with solid crystals that convert to gas





**Automatic Fire Suppression Systems for: Off-Road vehicles | Mining | Construction | Tunnel Drilling | Heavy Machinery**



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