

GRUPO  
**KOMTES**

**OIL & GAS**

 **SIEX**

**AG**...  
SPRINKLER

**Koneba®**

**Komttech** 

 **Macoin**  **Ribô**

  
**Tecno Envases**



*Exploration and extraction can be on land or on offshore platforms. Once extracted, ground transportation is done by means of oil or gas pipelines, FPSO vessels, tankers, LNG carriers, etc. The petroleum is processed in refineries, while gas is processed in regasification or compression plants. The distribution of both to storage facilities is also carried through pipelines, ships or trucks.*





The industry of extraction, processing and marketing of oil and its derivatives for the world's energy supply is critical for today's industrialized society.

It is a highly specialized and standardized sector with its own inertia, resulting from its high technological and economic levels of investment, in addition to its obvious strategic nature.

Fire protection is essential owing to the very high fire load present in all phases of the industrial processes involved, both On/Off Shore (Upstream Exploration and Extraction) and Downstream (Transportation, Refining and Distribution), with combustible elements in the form of crude and refined oil, natural gas, and highly combustible and flammable petroleum derivatives. These products can also generate locally hazardous and explosive atmospheres.



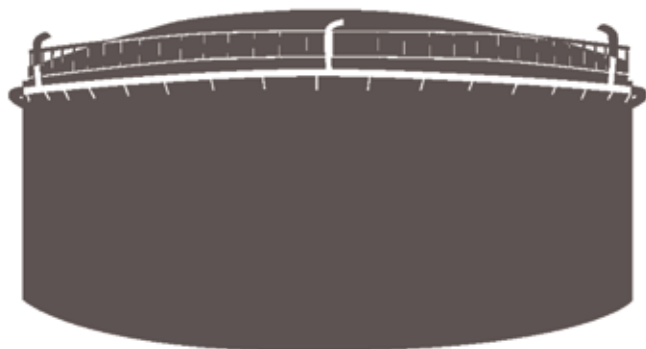
### *The most common uses of oil and natural gas are:*

- *Fuel for power generation.*
- *Fuel for industrial, residential and commercial use.*
- *Fuel for vehicles and heating.*
- *Asphalt production.*
- *Petrochemical feedstock for chemicals, synthetic rubber and plastics.*

FIRE OUTBREAKS	PASSIVE MEASURES		FIRE SOURCE EXTINCTION
	Preventive actions		
	KONEBA	Partitioning	
	ACTIVE MEASURES		
	KOMTTECH <i>detection</i>	Early detection	
		ATEX components	
	MACOIN/RIBÓ <i>manual methods</i>	Hoses	
		Special Hydrants	
		Skid-mounted dry chemical and CO <sub>2</sub> extinguishers	
		Equipment housings	
	AG FIRE SPRINKLER <i>structural protection</i>	Water mist	
		Flooding	
		Foam: flooding, nozzles, chambers and foam pourers	
	MACOIN / AG FIRE SPRINKLER / <i>clean systems</i>	FM-200™ for electrical rooms, with S-FLOW	
		Dry chemical skids	
		CO <sub>2</sub>	

# GRUPO **KOMTES**

*From mining, to transport, to refining or regasification, distribution, and all the way to retail delivery, the KOMTES Group offers all its experience and gamut of products and systems for highly demanding fire hazards throughout all operational phases, as demanding as they are dangerous (marine, explosive environments).*



**SPECIFIC INDUSTRY  
KNOWLEDGE**

**+**

**MISSION-SPECIFIC  
SYSTEMS**

**=**

**PROTECTION  
TAILORED TO  
YOUR NEEDS**

**We offer proven solutions to specific challenges.**

## **SOCIAL CHALLENGE**



**HIGH FIRE LOAD WITH  
EXPLOSIVE ATMOSPHERES**

**KOMTES acts:**  
these facilities  
operate on a global  
scale, with  
high-volume  
production and  
multiple dependent  
industries

**KOMTES offers:  
SUPPRESSION AND  
PARTITIONING SYSTEMS**

Starting with  
special, early  
detection, the use of  
deflagration  
suppression  
equipment prevents  
the spread of fire  
and its affecting  
other processes

## **EXTREME CHALLENGE**



**PRESENCE OF HIGHLY  
FLAMMABLE CHEMICALS  
AND FUELS**

**KOMTES acts:**  
Hazardous products, in  
the presence of risky  
activities, require the  
use of specialized  
components and  
immediate response.

**KOMTES offers:  
SPECIFIC PROTECTION  
EQUIPMENT**

Our systems facilitate  
the extinguishing  
action, refrigerate the  
fire source, and  
deploy specialized  
agents in accordance  
with their chemical  
compatibility

## **FUNCTIONAL CHALLENGE**



**POTENTIALLY CATASTROPHIC  
DAMAGE IN REMOTE  
LOCATIONS**

**KOMTES acts:**  
Combining our  
automated, manual  
and remote control  
methods enables  
acting safely and  
counting on backup  
systems should they  
prove necessary.

**KOMTES offers:  
AUTONOMOUS SYSTEMS,  
WITH BACKUP**

(reserves, mobile  
equipment)  
Systems ready to start  
up and use, with low  
maintenance  
requirements, discharge  
testing readiness, and  
backup and redundant  
detection systems.



# SPECIFIC PROTECTION NEEDS OF THE OIL & GAS INDUSTRY

These plants, whether for extraction, processing or storage, pose a great danger in case of fire. Apart from this danger, the high probability of explosions, chemical or fuel spills and environmental

damage must be taken into account, so these plants are often located far from urban centers.

The consequences of a fire are unfortunately known and extremely serious,

both economically and environmentally, not to mention the danger they represent to workers and the local communities affected by larger disasters.



# DETECTION

Because of the wide variety risks in this type of installation, it is necessary to apply the most appropriate method to the type of hazard to be protected against in each case. In many cases, we will have to take into consideration that we are facing **hazardous areas at high risk of explosions**, so we must use equipment that complies with this design constraint.

In certain areas, the high-sensitivity aspirating detection systems provided by **KOMTTECH** allow action to be taken when the source has barely developed and the smoke is just beginning. In wide-open spaces, separate linear or reflection barriers are well suited due to their wide area coverage.

In lower volume locations, such as control rooms or laboratories, detection systems for localized incipient fires may be employed.



# MANUAL METHODS

The successful action of security personnel specifically trained for fighting fires, as well as the fire service, depends on their access to proper manual means with sufficient range and autonomy.

**MACOIN/TIPSA** develops and markets equipment housings, hoses up to 60m in length, and special hydrants for industrial use, including those for extreme climates. The use of water and foam can effectively control and refrigerate hydrocarbon-fueled fires.

AG Sprinkler distributes manual monitors, electric or hydraulic self-oscillators, with water and/or foam nozzles.

The 50kg **MACOIN / TECNOENVASES** extinguisher skids

and trolleys facilitate displacing additional means to the affected source, and are highly mobile, allowing technicians to remain at a safe distance.

For longer manual action, **SIEX** offers **carts and dry chemical pressure vessels fixed to skids** for control of oil spills, for example. Both types include the agent with a powerful hose and a manual release nozzle. A second reserve deposit for backup can be added. **Twin-agent dust-foam** devices allow the **combined action of both products**, depending on the evolution of the fire, using a dry chemical potassium bicarbonate base compatible with AFFF foams for optimum performance, much more effective in these applications than water or CO<sub>2</sub>.

# PROTECCIÓN AUTOMÁTICA

**SIEX** develops systems that comprehensively protect critical indoor and associated areas, from where fire may propagate.

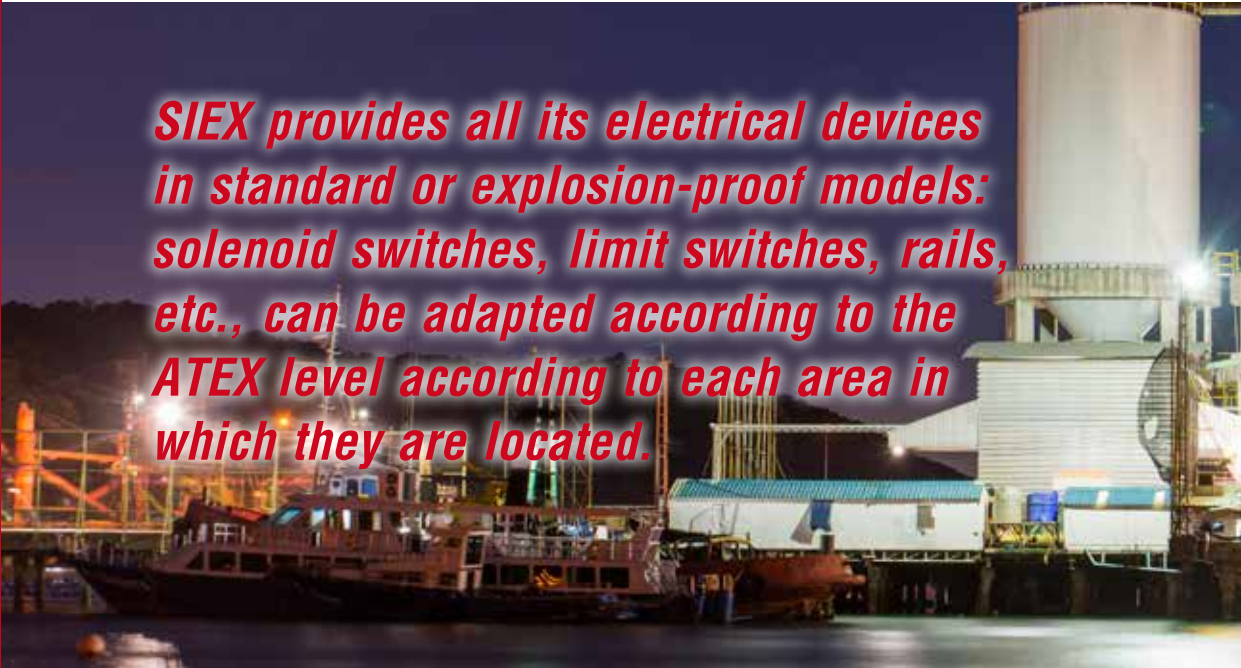
For electrical, surveillance or computer rooms, we recommend DuPont's™ FM-200® for its high efficiency and compact design.

Laboratories and clean rooms can be flooded with inert gases, which is fast-acting and safe for expensive technical equipment.

Transformers, electric generators and air conditioning equipment can be protected with Water Mist or CO<sub>2</sub> due to their excellent suitability for electrical fires and focused application on machinery, and

therefore do not require sealed rooms to operate.

Product spills and leaks are protected against with dry powder (Purple K, BC powder) and equipment with attached or incorporated pressure, in the form of tanks on skids: **the optimal agent for LNG gas leaks and fires with jetting gas.** This system suppresses flames instantly for cases in which water is not recommended, and has a wide range of applications: on tanks, jetties, jetty unloading arms, pumps, platforms, vaporization racks, oil spills, vehicles, etc. In addition, its high dielectric strength broadens its range of uses to energized electrical fires.



***SIEX provides all its electrical devices in standard or explosion-proof models: solenoid switches, limit switches, rails, etc., can be adapted according to the ATEX level according to each area in which they are located.***



# PROTECTION WITH FOAM AND WATER MIST

Foam is the best suited solution for protection of liquid hydrocarbon storage systems. Tanks and dikes or bins are equally protected with foam chambers, foam makers and monitors.

In addition, **water mist rings for cooling** the tanks are available, with open nozzles and deluge equipment, covering both the burning tank as well as its possible immediate neighbors.

For all types of storage, **AG FIRE SPRINKLER** can provide adequate environmental protection: chambers

for tanks with fixed or floating roofs, foam makers for sealed floating roofs, and foam makers and monitors for dykes or bins and processing areas. Similarly, pre-action systems with closed sprinklers or foam-water deluge characteristics for other uses such as processing units, fuel transfer areas or vehicle loading are provided.

In jetties, custom protection systems with remote-controlled monitors on towers allow protecting the ship from what happens on land, as well as the dock itself from contagion from other areas.

For other related uses, such as chemical storage facilities or the processing of various types of finished products, **AG FIRE SPRINKLER** provides high expansion foam systems.








For the protection of transformers, cable tunnels, conveyors, tanks, and pipe racks, as well as general structural protection, **AG FIRE SPRINKLER** offers a wide range of Water-Mist based solutions.





***KOMTES Group's solutions for the protection of Oil & Gas facilities comprises all upstream and downstream activity: mining (on offshore ships or platforms, onshore), transportation by boat or pipeline, refining (refineries, regasification plants), petrochemical production, and distribution (storage and gas stations). Whatever the case, be spills, leaks, jetting fires or explosion hazards, among others, we offer the latest protective equipment.***



PROTECTION AREAS			  			
EXTRACTION AND PROCESSING	Oil fires (processing, treatment, pipelines and tanks)	Infrared detection	Hydrants and monitors. Hydrant equipment housings	Foam and water mist systems	Partitioning	Dry chemical tanks with carts and hoses. Twin agent: Dry chemical and AFFF
	Gas fires (processing, pumping, racks, pipelines and tanks)			Water mist. Water curtains		Stationary and manual dry chemical systems
	Loading facilities (docks, loading areas, jetties, trucks)	-		Remote-controlled monitors		Dry chemical tanks with carts and hoses. Twin agent: Dry chemical and AFFF
	Storage of chemicals and reagents	Thermal Linear	-	Foam Systems		Stationary and manual dry chemical systems
ELECTRICAL HAZARDS	Processing rooms	Aspiration	-	Water mist	Partitioning	CO <sub>2</sub> . Water Mist, Inert materials
	Cables and wiring	Thermal linear	-			-
	Substations and panels	Aspiration	Portable fire extinguishers, skids, hydrant boxes	Automatic sprinklers		HFCs, water mist
	Technical rooms	Gas and smoke point systems aspiration				



## DETECTION SYSTEMS

- **OPTIMAX**
- **PREMIUM**

## INTELLIGENT

Analog and algorithmic systems with voice evacuation.

## CONVENTIONAL

Option for remote access via TCP/IP for system management.

## SPECIALTY SYSTEMS

- HIGH SENSITIVITY LASER DETECTION VIA ASPIRATION
- LINEAR THERMAL DETECTION VIA HOT-MELT TECHNOLOGY OR FIBER OPTICS
- SPECIAL TEMPERATURE PROBES
- THERMO GRAPHIC CAMERAS
- ASSORTED ATMOSPHERES

## AUTOMATIC PROTECTION SYSTEMS

### SPRINKLERS

- SPRINKLERS
- VALVE CONTROL SYSTEMS
- VALVES

### FOAM

- CONTROL VALVES
- STORAGE TANKS
- FOAM PROPORTIONERS
- PROTECTION OF FLAMMABLE LIQUID STORAGE TANKS AND TROUGHS
- GENERATORS
- MONITORS

### WATER SPRAY

- HIGH/MEDIUM VELOCITY OPEN SPRAY NOZZLE
- VALVE CONTROL SYSTEMS

## FIRE SUPPRESSION SYSTEMS

### CLEAN AGENTS

- SIEX-HC™
- SIEX-HC™ S-FLOW
- SIEX-NC™ 1230
- INERT-SIEX™
- INERT-SIEX™ CFT
- SIEX™CO<sub>2</sub>

### WATER MIST

- UAC (cylinder groups)
- UAP (electrical / diesel pump unit)

### DRY CHEMICAL POWDER

- STORED PRESSURE
- CARTRIDGE OPERATED
- STATIONARY / SEMI-PORTABLE HAND HOSE LINE DRY CHEMICAL EXTINGUISHING SYSTEMS UNITS
- HAND HOSE DRY CHEMICAL EXTINGUISHER TRAILERS
- TWIN AGENT

### FOAM PREMIX

### AUTONOMOUS DETECTION

### KITCHEN SYSTEMS

## MANUAL FIRE PROTECTION

### HOSE REEL CABINETS

- WITH SEMI-RIGID HOSE
- WITH FLAT HOSE
- ALARM AND EXTINCTION CENTERS

### HYDRANTS

- DRY BARREL
- WET BARREL
- BURIED
- CUSTOM CABINETS FOR HOSE AND ACCESSORIES

### EXTINGUISHERS

- WATER
- DRY CHEMICAL
- CO<sub>2</sub>
- SPECIAL APPLICATIONS (non-magnetic, etc.)

## FIRE, SMOKE AND TEMPERATURE CONTROL

### SECTORIZATION

- **SMOKE CONTROL:**
  - KORTEX SMOKE FIX 600 C°
  - KORTEX SMOKE AUTOMATIC 600 C°
  - KOTEX SMOKE AUTOMATIC 1100 C°
- **FIRE CONTROL:**
  - KORTEX FIRE E
  - KORTEX INSULATION FIRE EW
  - KORTEX RAIN FIRE EI

### ELECTRONIC MECHANISMS OF CONTROL

### EXPULSION OF SMOKE

- LOUVER (LAM)
- TWIN FLAP

