



# EN 14470-1 SAFETY CABINETS FOR FLAMMABLE AND EXPLOSIVE PRODUCTS

## EN 14470-2 SAFETY CABINETS FOR GAS CYLINDERS

### INTRODUCTION

For security reasons you have to store your flammable or explosive products in a safety cabinet. No matter your business branch or the degree of flammability of your products, they have to be stored in case of fire in order to delay the risk of explosion.

### NORM

EN 14470-1 and 14470-2 EUROPEAN NORM:

**EN 14470-1** **EN 14470-2**

### Scope

**EN 14470-1:** The new European norm came into effect in October 2004 and concerns the storage of flammable products in laboratories. It also only concerns the safety cabinets which internal volume is equivalent or less than 1m<sup>3</sup>.

**EN 14470-2 :** The new European norm came into effect in April 2006 and concerns the storage of gaz cylinders in laboratories. It also only concerns the safety cabinets with total internal volume allows storage gaz cylinders in a lower capacity 220 liters.

**FM ( FACTORY MUTUAL ) :** Offers worldwide industrial and commercial product certification and testing services through its business unit FM Approvals. Recognized and respected across the worldwide, FM Approvals certification assures customers that a product or service has been objectively tested and conforms to the highest national and international standards. The certification FM requires a fire-resistance of 10 minutes for Safety cabinets, according to the heat curve NFPA 251-1969

### Main requirements



#### 1. Fire protection:

In case of fire, the safety cabinet shall assure for at least 15 minutes that the contents of the cabinet do not contribute to any additional risks or spread of fire. A fire safety storage cabinet shall be classified as one of the types listed below:

EN 14470-1 Storage of flammable liquids	EN 14470-2 Storage of gas cylinder	Fire resistance
Type 15	Type G15	15 minutes
Type 30	Type G30	30 minutes
Type 60	Type G60	60 minutes
Type 90	Type G90	90 minutes

#### 2. Fire test:

All cabinets described in this brochure have succeeded a fire test destruction in according to EN 14770-1 (2004) or EN 14470-2 (2006) norms. These tests were conducted by an outside laboratory accredited by COFRAC.

#### 3. Spill containment sump:

A spill containment sump shall be installed underneath the lowest storage level. The sump shall have:

- a minimum capacity of 10% of the volume of all containers stored in the cabinet,
- or at least, 110% of the volume of the largest single container, whichever is the greater.

#### 4. Construction:

The doors of the cabinet must be fully self-closing from any position. The side and back walls must be of the same thickness and comparable construction. Requirements are given in respect of the construction of the cabinet and its capacity to resist fire conditions from the outside (Fire test given in ISO 834-1 and EN 1363-1).

#### 5. Safety labelling and labeling:

Cabinets must be fitted with its signage: standardized pictograms in as per standard ISO 3864:

**EN 14470-1:** flammable materials, open flame and smoking prohibited, permissible maximum load per shelf, the largest container can be inserted into the cabinet, fire resistance model (15, 30, 60 or 90 minutes) capacity maintains closed when the cabinet door is not used ...

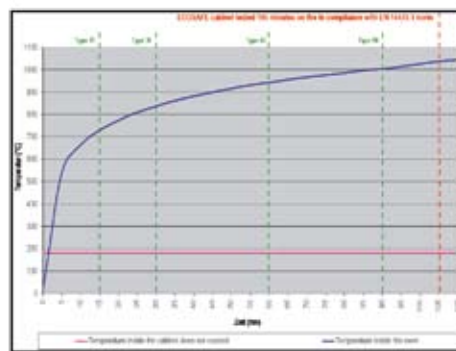
**EN 14470-2:** presence of compressed gas cylinders, fire resistance model (15, 30, 60 or 90 minutes), maintains cabinet doors closed when not in use.

#### 6. Ventilation:

Safety Cabinets must have air inlet and outlet as well as a thermo-fuse which seals off the ventilation system in case of fire. These could be used to connect a forced ventilation system. The air change must be at least 10 times the volume of the safety cabinet (closed doors).



^795 cabinet placed into the oven to fire test according to EN 14470-1 norm (photography before test).



^ ISO 834-1 fire test curve



^Sensors in a flammable cabinet

**CHOOSE YOUR SAFETY CABINET ACCORDING TO YOUR ACTIVITY AND TO THE LEVEL OF PROTECTION YOU NEED**

FLASH POINT <sup>(1)</sup>	DEGREE OF FLAMMABILITY	EXEMPLE OF PRODUCTS	RECOMMENDED SAFETY CABINETS	
			In Industries <sup>(2)</sup>	In laboratoires
HIGHER THAN 55°C	LITTLE FLAMMABLE	FUEL, GAS OIL	RANGE 3030, 7030, 1, 2	RANGE 3030, 7030
BETWEEN 21°C AND 55°C	FLAMMABLE	OIL OF TURPENTINE, WHITE SPIRIT	RANGE 3030, 7030, 1, 2, 3	RANGE 3030, 7030
BETWEEN 0°C AND 21°C	EASILY FLAMMABLE	ETHANOL, METHANOL	RANGE 7.60, 2, 5	RANGE 7.60
UNDER 0°C	EXTREMELY FLAMMABLE	ACETONE, ETHER	RANGE 7.90	RANGE 7.90
Gas cylinders model B2, B5, B11, B20 et B50			RANGE 7630BG	RANGE 7630BG

<sup>(1)</sup> Flash point: Lowest temperature at which a liquid could form gas/air mixtures, able to burn with an ignition source.  
<sup>(2)</sup> Please check our brochure Safety cabinets for flammables.

**IN THIS PART OF THE CATALOG YOU WILL FIND:**

EN 14470-1 Safety cabinets - 105 minutes	EN 14470-1, FM	Range 7.90
EN 14470-1 Multirisk cabinets - 105 minutes	EN 14470-1	Range 7.90M
EN 14470-1 Safety cabinets - 60 minutes	EN 14470-1	Range 7.60
EN 14470-1 Safety cabinets - 30 minutes et 15 minutes	EN 14470-1, FM	Range 3030
EN 14470-1 Multirisk cabinets - 30 minutes	EN 14470-1	Range 3030.M
Safety cabinets for gaz cylinders	EN 14470-2	Range 7630BG
EN 14470-1 Safety cabinets for recovery waste - 105 minutes	EN 14470-1	Range 7.90ARD

The manufacturer reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 09/2017

Flammable cabinets

Corrosive cabinets

Toxic cabinets and multirisk

Pesticide range

Fume hoods, filtering cabinets - Ventilation

Containment and Cans

File cabinets Anti-fire equipments

Showers and first-aid equipments