LABOSAFE

Safety cabinets

Safe storage of hazardous substances

LABOSYSTEM

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DEPOSIT AND STORAGE

The technical solutions by Labosystem have always been implemented in compliance with the many EU directives, aimed at continuously improving safety in the workplace, in order to manufacture efficient collective protection equipment, featuring cutting-edge technology and with great respect for the environment.

The LABOSAFE line of safety cabinets is the result of this and represents the response of the Labosystem design team to a series of complex demands for the safe storage of toxic, corrosive, irritant and hazardous substances that are harmful either to man or to the environment.

The goal is to ensure safe use while minimising the risk of accidents, for example by placing the top shelf at a height that allows visibility for the user or by using ergonomic systems, such as pull-out drawers that make it easier to find containers and access them.

All science laboratories, especially chemistry laboratories, use numerous different chemicals that, even if used occasionally and only in small quantities, can still pose a threat to the working environment of "background" contamination when stored for long periods, unless stored in strict accordance with certain essential safety rules, including behavioural rules, which protect air quality.

In fact, the behavioural aspect is a key factor for the correct storage of all the substances that users come into contact with on a daily basis. For this reason, the LABOSAFE project fully complies with the EU directives, since it provides for not only the supply of the cabinet but also information and training.

ACTIVE ERGONOMICS

The ergonomics of the LABOSAFE cabinet allow a simple approach, since it has been designed for its intended use and it is not just a simple cabinet that has been adapted to suit this purpose. A series of signs placed on the outside and on the inside of the storage compartment provide valuable information on the tasks to be carried out in order to ensure safe storage of the products. This actively contributes to preventing the most common risks, especially the risk of storing incompatible substances, accidental spillage, and risks for workers such as inhalation of vapours or direct contact with hazardous substances.

The internal trays are provided with an internal grid to preserve containers in case of nearby spillage.

he unique drainage system of the trays allows accidental spillage to be effectively managed, channelling all liquids into the lower collection tank.

The interior LED lighting significantly contributes to raising safety levels. The containers are identified more clearly.

CONSTRUCTION FEATURES

The technical solutions implemented by the LABOSAFE development team are in line with the quality policy that has always characterised Labosystem products, made with durable materials and components with high corrosion resistance to ensure a life cycle that justifies investing in this purchase.
Labosafe is certified in accordance with the EN 14727:2006 standard, which defines the requirements and test methods for the storage units used in laboratories. This standard specifies the resistance, duration and safety requirements in order to avoid serious damage during normal use.

The cabinets are available in several configurations and are made in a flame-retardant wood-based particle board with grey melamine resin and Labgrade® HPL laminate.

The assembly system and mechanical components are designed for corrosive atmospheres and, where possible, are positioned so that direct contact is avoided.

The internal trays are made of a steel sheet epoxy-coated in silver RAL 9022, are easily height-adjustable and removable without having to tilt them.
Protection from spillage is ensured thanks to a large tray placed on the bottom of the cabinet.

The "Pannello Ecologico" (Ecological Panel) consortium was established to meet the growing need to respect the environment and promote the importance of recycling resources.
From the collection of the items used to the recovery and processing into a new and functional product, everything is part of a repeatable and unique cycle aimed at preserving the environment and its resources, thus giving the company and consumers the extraordinary opportunity to actively and directly intervene to defend nature.

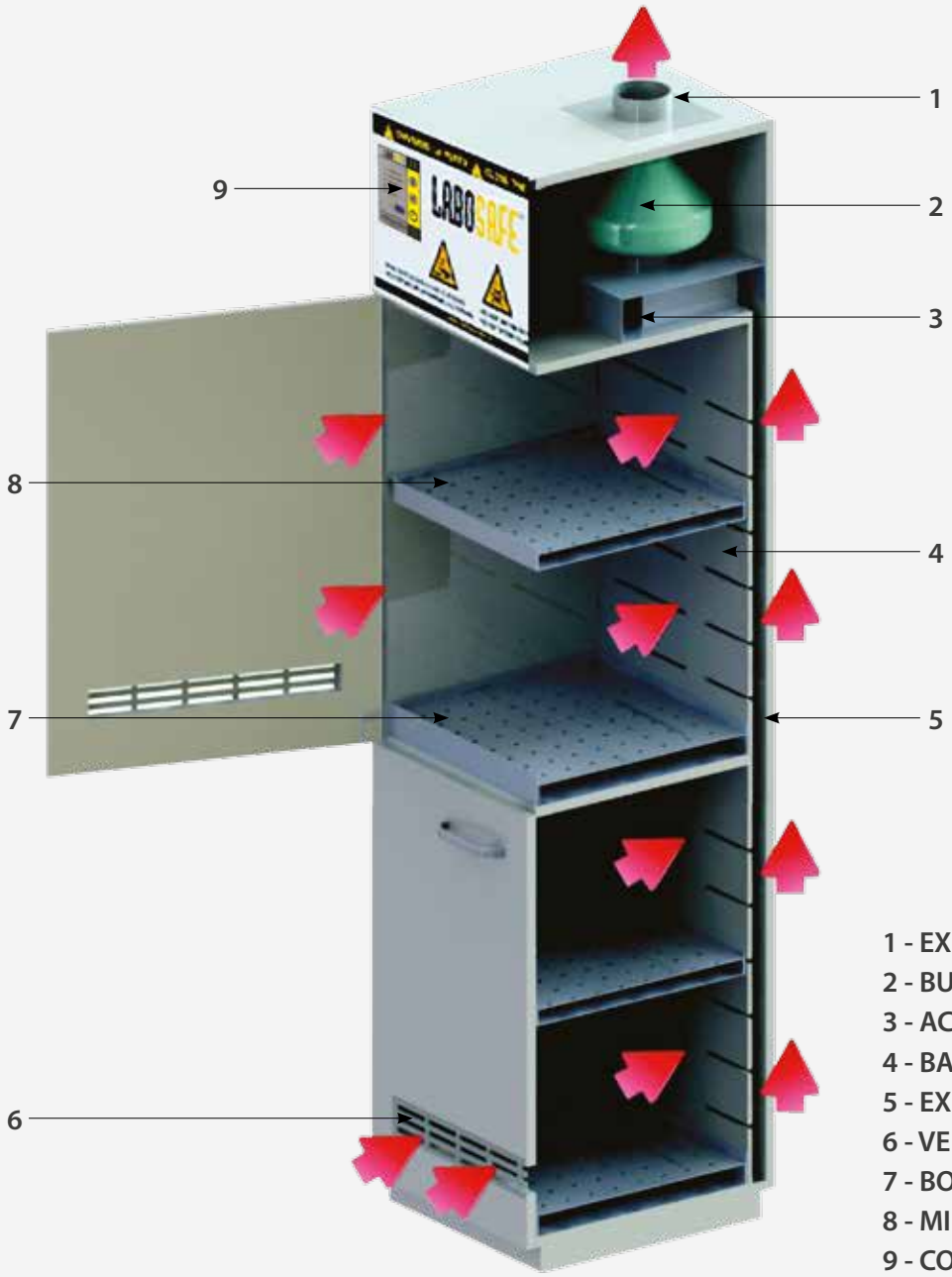
In the upper part of the cabinet, concealed by a metallic casing, an extractor plenum is obtained with a drawer for the filter, an electric exhaust fan and a connection to the expulsion tube.
The casing is designed to ensure easy access and facilitate maintenance operations.

The doors, equipped with acid-resistant hinges and safety locks, can be opened widely to make the loading and unloading of containers easier.
The doors are connected to an interior lighting system featuring LED technology and, when opened, the storage compartment is perfectly lit up, which allows the containers to be identified with greater safety.
A delayed acoustic alarm warns the user if the door has been left open by accident.

EXTRACTION AND FILTRATION SYSTEM

During the development stage of the cabinet, the extraction system was a crucial element to manufacture a device that is both effective and able to offer a high level of comfort in laboratories.

Hence, we decided to apply the experience acquired with the TYPHOON TWIN hoods, the line of fume hoods with high technological content by Labosystem.
The system uses a rear exhaust chamber for conveying the air, which, after passing through the grids placed at the front on the doors, laps the trays and is first filtered with activated carbon and then expelled outside by the electric exhaust fan positioned in the upper part of the cabinet.
The amount of extracted air varies depending on whether one or both doors are open. When the doors are closed, extraction is brought to minimum levels to ensure the necessary air changeover.



1 - EXPULSION MANIFOLD
2 - BUILT-IN AXIAL EXTRACTOR FAN
3 - ACTIVATED CARBON FILTERS
4 - BACK BAFFLE EXTRACTION
5 - EXHAUST CHAMBER
6 - VENTILATION GRIDS
7 - BOTTOM TANK
8 - MIDDLE TRAY
9 - CONTROLLER

LABOSAFE INTEGRATED CONTROLLER

L.I.C. (Labosafe Integrated Control) is an advanced digital controller, which supervises cabinet management, as well as all the alarms, extraction and filtration functions, and the management of programmed servicing.

The interface is equipped with an RS232 communication port and allows several parameters to be monitored, such as:

- Servicing intervals
- Filter replacement
- Interior lighting management
- Open door alarm
- Extraction volume setting (with interior extractor fan)
- Internal temperature alarm (*)
- Application of controlled access locks (*)

(*) optional

LABOSAFE AND TYPHOON TWIN

The quality of the air inside the laboratories is affected by the method used for storing containers with chemical products and by the various primary barriers used to remove contaminants at the source (fume hoods, ventilated cabinets, reagent cabinets, etc.).

The space in laboratories is always insufficient and each fume hood, cabinet, cupboard, overhead shelf, shelf or other free surfaces are used for storage purposes, or rather as a place where all kinds of containers are accumulated. This often creates problems or may even cause serious accidents.

For these simple yet essential reasons, integrating Labosafe in the Typhoon Twin fume hood makes it a perfect addition. Labosafe under fume hoods are the best place to safely store chemical substances during daily activities in laboratories, as well as to support and integrate the centralised reagent cabinet.

The control system of the Typhoon Twin hood will manage the function of the cabinet, thus ensuring minimum ventilation also if the hood switches off.

TIPS FOR INSTALLATION

The cabinets must be positioned away from corridors, work areas, access to the laboratory or to a room, and emergency exits, and far from naked flames (Bunsen burners, stoves, etc.) and should not stand in the way of emergency equipment (fire extinguishers, first aid kit, eye washers or showers, etc.). Cabinets requiring extraction, in particular, must ensure a minimum of 10 air changeovers per hour and the tubes, preferably made of plastic materials, should not pass through other rooms other than the one where the cabinet is installed so that the shortest route available is used.

Periodically check the stored substances. Storage that is not suited to the characteristics of a product may cause degradation of the product itself, thus making it more hazardous. Certain products are affected by humidity, heat, cold, light and contact with oxygen in the air, etc. Excessively long storage may also lead to substance degradation or transformation.

Materials for absorbing and removing any spillage should be placed next to the cabinet, as specified in the Safety Data Sheets.

Finally, as for the hoods, at least one annual inspection per year is to be scheduled and the mandatory preventive maintenance recommended by the manufacturer and by the risk assessment document is to be carried out.

In order to be able to consider safety cabinets as Collective Protective Equipment in the risk assessment document, they must mandatorily be channelled towards the outside or equipped with active air filtration systems. Otherwise, they will act only as fire-retardant devices but will not be able to prevent workers from being exposed to the harmful vapours generated in them.

Correct storage must necessarily take into consideration the incompatibility of chemical substances, since accidental contact between two chemically incompatible substances may lead to highly dangerous reactions.
One of the most important rules to follow in order to work safely in a chemical laboratory is to know the chemical product that is being handled. The term "know" actually entails our ability to identify it clearly, to know the properties of the class of compounds to which it belongs, to be able to quickly read the label that distinguishes it from other substances, and to read more carefully the safety data sheet that accompanies it, also using online databases providing plenty of chemical and toxicological information on the substances available on the market.

The packaging or containers of the substances and preparations classified as hazardous all have a label, which is the first source of information on how to handle the product. It is therefore essential to know how to read it carefully and understand its meaning.
The label contains concise but clear information on the hazards related to substance handling and on the most appropriate procedures to be taken to reduce these risks.

TECHNICAL DATA

WT48060 SAFETY CABINET FOR CHEMICALS, ACIDS AND BASES

Built and certified in accordance with the EN 14727 standard (for non-flammable substances)
Interior LED lighting activated by opening the doors (it requires 220V power supply)

External dimensions (mm) W 600 D 500 H 2050	
Internal dimensions (mm) W 560 D 440 H 1560	
Weight (Kg) 120	Expulsion connection (mm) ø 100
Tray capacity (Kg) 30	Bottom tank capacity (Kg) 80
Tray containment (lt) 7,5	Bottom tank containment (lt) 15
Max. tray storage (lt) 30	Max. bottom tank storage (lt) 30

WT48099 L.I.C. - LABOSAFE INTEGRATED CONTROLLER

Digital controller to manage cabinet functions:
Presence of voltage for extraction
Extraction calibration
Interior lighting
Open door alarm and silencing
Service and maintenance
Filter replacement

WT85027 INTERNAL ELECTRIC EXHAUST FAN

Power supply (V/Hz) 220/50	Power (W) 33
Min./max. expelled air flow (m^3/h) 25 - 150	

WT85060 FILTER CELL AND ACTIVATED CARBONS

Accessories:

WT80010: Tank for tray in Polyethylene (Pe) 520x400x80 mm
WT80020: Cover for tray in Polypropylene (PP)
WT80030: Cover for bottom tank in Polypropylene (PP)
WT80040: Additional epoxy-coated tray
WT80050: Stainless steel tray
WT80060: Stainless steel bottom tank
WT80070: Stainless steel grid for protecting containers
WT80080: Tray extraction set (only for the lower compartment)
WT80090: Anti-spillage first aid kit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