# World No.1
# EHS Solution
# Provider


We provide new value to customer for safe research environment

GT SCIEN
Green Technology Science & Environment

GT SCIEN
Green Technology Science & Environment

For research that shapes the future

# Safest solution

By integrating AI and IoT technology with our advanced toxic gas purification system, we introduce a safer laboratory environment and a more convenient safety management system for the first time.

"**Prevention** is the most effective safety measure, and it can be achieved through **proactive management.**"

As a pioneering leader in environment, health, and safety (EHS), our mission is to consistently advance technology and promote safety awareness, ensuring researchers can conduct their work in a safer environment.

## Advancing EHS through GT SCIEN

| E | H | S |
|---|---|---|
| Environment | Health | Safety |
| LAB | EHS | 4.0 |
| Environmental protection and energy conservation | Promoting researcher well-being and optimal experimentation conditions | Risk management and accident prevention |

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# TOGA, Breathe safely

**TOGA clean system marks the inception and aspirations of GT SCIEN.**
Eliminate and purify hazardous gases, creating a secure research environment.

**Unseen hazards from harmful gases endangering researchers. Have you ever considered your level of exposure?**

TOGA (Toxic gas air purification) specializes in effectively removing toxic gases from chemical substances.

TOGA creates a safe breathing and research environment for researchers dedicated to advancing human life and individuals working with exposure to diverse chemicals

# TOGA Clean system portfolio

**TOGA Clean system comprises equipment equipped with TOGA filters designed to remove or purify harmful gases.**

# Hazards posed by chemicals in the laboratory

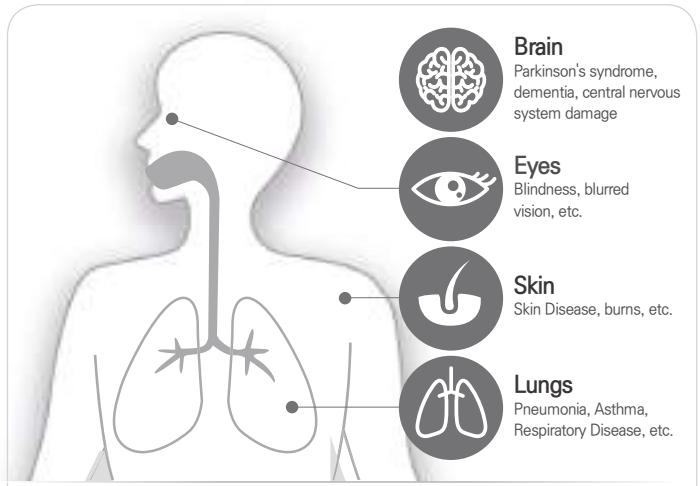
With the increasing sophistication of the industry, laboratories are utilizing a broader range of chemicals, necessitating the implementation of chemical exposure standards under the occupational safety and health act to safeguard worker health.

## Chemical hazards in laboratory environments

1. Respiratory damage from toxic gases emitted by harmful substances and health issues resulting from prolonged exposure to chemicals
2. Potential injuries associated with chemical handling
3. Accidents resulting from negligence in chemical and waste storage management
4. Building deterioration causing exhaust capacity decline, leading to the stagnation and reintroduction of harmful gases.

**Stay vigilant and safe when handling chemicals!**

- Identification of hazards in chemical handling
- Understanding proper response to exposure to hazardous substances
- Utilize protective equipment to shield against harmful substances




Chemical-generated harmful gases can cause skin diseases, blurred vision, respiratory issues, and serious illnesses including leukemia and cancer.

# Diseases resulting from chemical exposure

**To ensure the safety of researchers and workers, it is crucial to eliminate toxic gases generated from chemicals at the source, as physical damage and illnesses occur only after prolonged exposure.**

| Substance | Chemical Formula | TLV-TWA | TLV-STEL | Health risks upon exposure |
|---|---|---|---|---|
| Chloroform (Trichloromethane) | $CHCl_3$ | 10 ppm | - | Skin disease, toxic hepatitis |
| Benzene | $C_6H_6$ | 0.5 ppm | 2.5 ppm | Anemia, leukemia |
| Trichloroethylene | $CCl_2CHCl$ | 10 ppm | 25 ppm | Skin disease, toxic hepatitis, renal cancer |
| Formaldehyde | HCHO | 0.1 ppm | 0.3 ppm | Asthma, paranasal sinus and nasal cavity cancer, leukemia |
| Lead | Pb | 50 μg/m3 | - | Anemia, peripheral neuritis, nephritis |
| Nickel (soluble compounds) | Ni | 100 μg/m3 | - | Dermatitis, lung cancer, paranasal sinus, & nasal cavity cancer |
| Cadmium | Cd/CdO | 10 μg/m3 | - | Kidney disease, lung cancer |
| Chromium (IV) compounds (water-soluble) | Cr | 50 μg/m3 | - | Dermatitis, respiratory system damage, lung cancer |
| Sulfuric acid | $H_2SO_4$ | 200 μg/m3 | 5 ppm | Chronic bronchitis, laryngeal cancer |
| Ethylene oxide (EO gas) | $(CH_2)_2O$ | 1 ppm | - | Leukemia, cataracts |
| Dimethylformamide (DMF) | $HCON(CH3)_2$ | 10 ppm | - | Dermatitis, toxic hepatitis |
| Ozone | $O_3$ | 0.05 ppm | - | Pulmonary edema, respiratory system damage |

▶ TLV (Threshold Limit Values) : Permissible concentration of exposure to chemicals
▶ TLV-TWA (Time-Weighted Average) : Concentration at which a worker is deemed not affected when he/she works for 8 hours a day, 40 hours a week
▶ TLV-STEL (Short-Term Exposure Limit) : Maximum concentration at which a worker can be exposed for 15 consecutive minutes

# Importance of EHS management

EHS management encompasses guidelines and procedures aimed at enhancing a company's performance in Environmental, Health, and Safety aspects. It focuses on ensuring and improving worker safety and the surrounding environment.
Companies implements EHS management practices to minimize environmental pollution, safeguard employee health, and ensure safety by adopting eco-friendly management approaches.


**Environment**

- Essential management systems for environmental work
- Increasing demand for proactive environmental management systems
- Addressing the strengthening of laws and regulations
- Increasing need for advanced environmental management techniques

**Health**

- Prevention of hazardous work environments
- Increased personal health awareness

**Safety**

- Enhanced safety management through systematic approaches
- Creating a culture of safety
- Building a systematic educational foundation

# What are the advantages of EHS management systems?

- Promoting responsibility and fostering a culture of safety compliance can **reduce workplace injuries and costs.** Continuous sharing of safety information helps establish a culture of safety and health awareness among workers.
- Identifying and preventing environmental risks **enhances productivity and transparency.**
- Implementing risk management and prevention measures in EHS can drive **ROI, boosting revenue and market share.**
- Enhancing corporate image through effective management **fosters sustainable brand loyalty.**

GT SCIEN
Green Technology Science & Environment

# GT SCIEN's mission revolves around core technology

**Environment**
Safeguarding the research and global environment

→ Ductless

**Health**
Health and well-being of laboratory workers

→ TOGA Filter

**Safety**
Promoting safety through proactive accident prevention management

→ AIoT EHS Platform

# Ductless technology safeguards the laboratory and the global environment

The Occupational safety and health act advises the use of hazardous substance removal devices to safeguard workers from harmful gases. Many laboratories install fume hoods and local exhaust systems. However, ductless systems, which utilize filters to remove harmful gases, offer an alternative solution that can improve the laboratory's hazardous environment without requiring exhaust construction.

## Ductless Construction and Features

### Energy efficient
Reducing energy loss by minimizing room temperature fluctuations caused by exhaust air

### Environmental protection
Preserving the air environment by eliminating external emission of pollutants

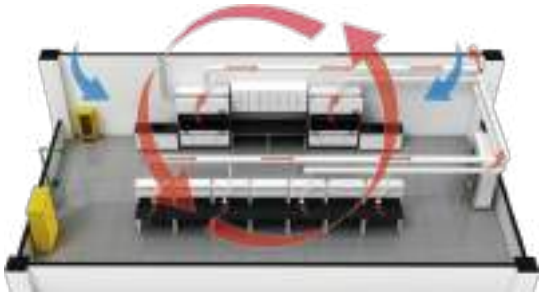
### Enhanced convenience
Easy installation and portability without the need for additional modification for exhaust

### Efficiency
Maintaining optimal exhaust air exchanges without deterioration from multiple exhaust devices

### Safety
Ensuring safety by preventing re-entry of toxic gases discharged outside

### Cost savings
Cost savings due to the elimination of additional work for connecting to duct system

## Ducted vs Ductless lab



- **Ducted laboratory**

  Laboratories with only exhaust devices experience air quality, temperature, and humidity deviations at each exhaust location, impacting experimental results and resulting in high energy consumption.

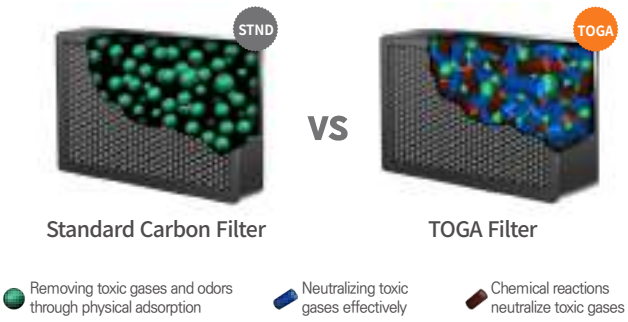
- **Ductless laboratory**

  Ductless toxic gas purification technology addresses the limitations of relying solely on exhaust air to maintain laboratory environment. It efficiently removes toxic gases, regulates temperature and humidity, and promotes energy savings.

# TOGA Filter : promoting researcher's (health) and well-being

The TOGA Filter is a filter that has been independently researched and developed by GT SCIEN Co., Ltd. It is created by combining substances that undergo physical adsorption, chemical reaction, and neutralization reactions, resulting in its exceptional ability to remove various harmful gases.

## TOGA Filter construction and features




- **Outperforming standard carbon filters, the TOGA Filter removes harmful gases through enhanced adsorption and chemical reactions.**
  - Extended filter replacement intervals
  - Exceptional toxic gas removal capability
  - Reduced contamination from resorption
- **Zero emissions of ozone and nitrogen oxides from side reactions**
- **Optimally designed for effective removal of diverse contaminants using maximum filter passing area.**
- **Versatile filter structure for diverse equipment function**

## Filters for specific applications

**Standard** Type
Optimal blend of 3 substances for laboratory environment filters

**A** Type
Highly efficient in removing VOCs, alcohol, hydrocarbons, and odors (over 99.0% removal efficiency)

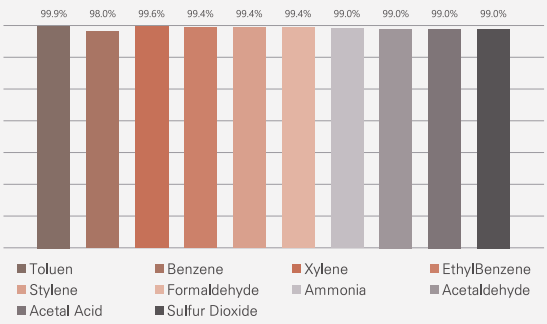
**B**
Exceptional removal efficiency (over 99.8%) for general organic compounds, $O_3$, $NH_3$, and odors by adsorbing toxic gases on a high surface area.

**C** Type
Superb removal efficiency (99.5% or higher) for NOx, SOx, acids, and bases through chemical reactions targeting acid gases

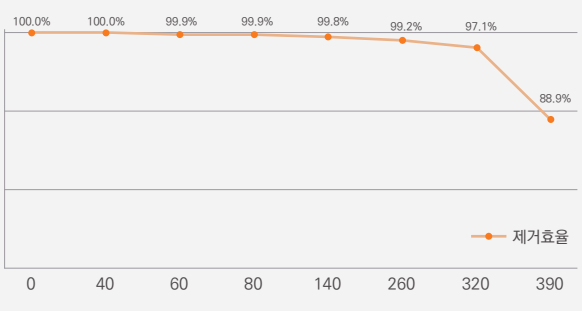
**Special** Type
Customized for specific application

## TOGA Filter performance test

### Filter performance and purification efficiency test results



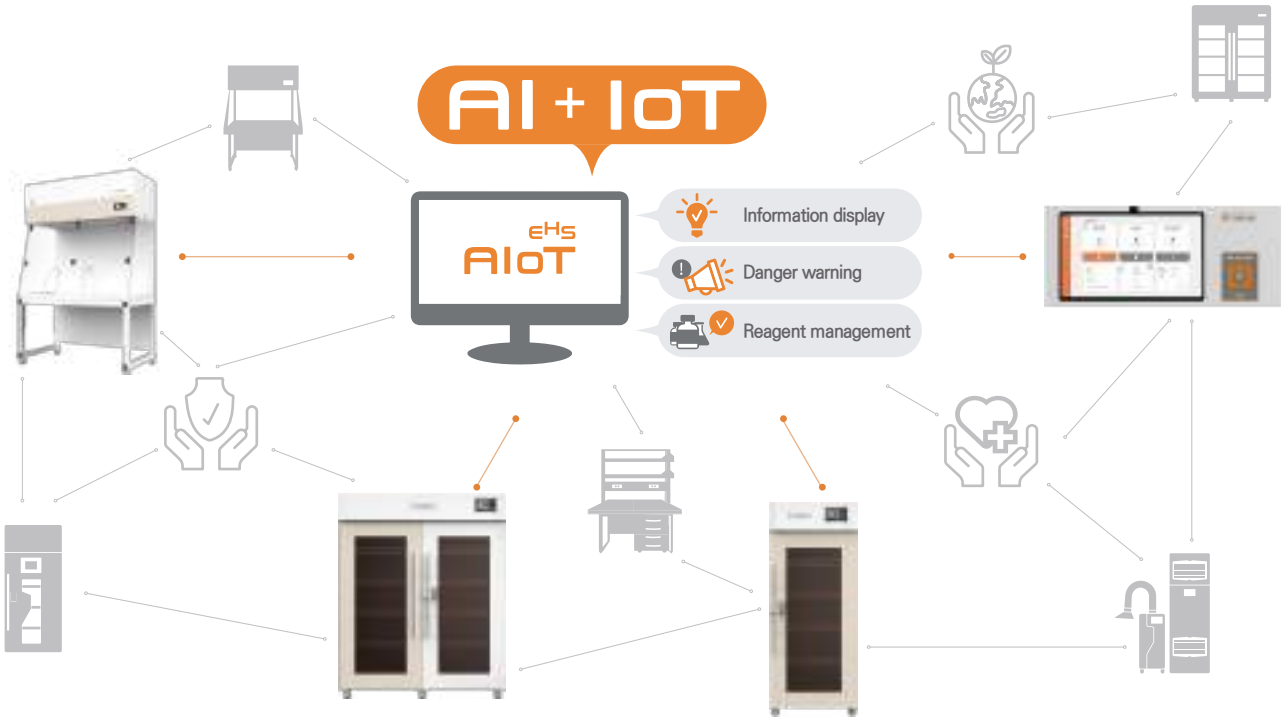

Over 99% average removal rate of toxic gases [Korea Institute of Mechanical Engineering]




Sustained high efficiency in removing hydrochloric acid (HCl) over an extended period [Korea Chemical Research Institute].

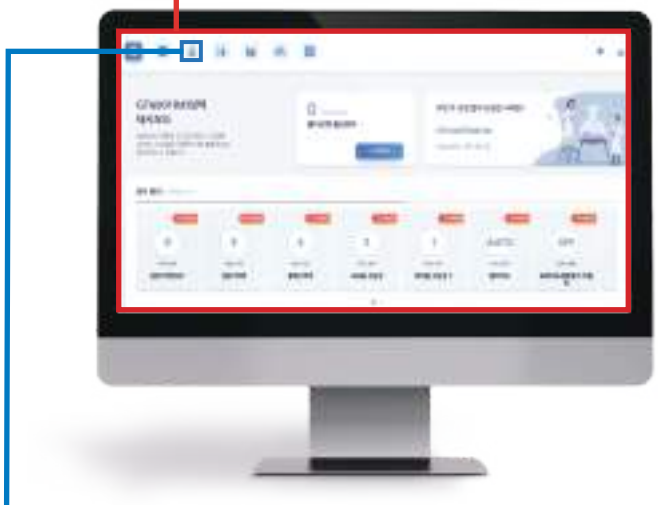
# AIoT for accident prevention and enhanced safety

Introducing AIoT technology, GT SCIEN Co., Ltd. revolutionizes safety equipment by combining artificial intelligence and Internet of Things to prevent accidents and enhance laboratory safety. By collecting and analyzing experimental data, our innovative approach ensures a secure laboratory environment.




## Laboratory Safety and Prevention Management System (LSPMS)

GT SCIEN's innovative laboratory safety prevention management system analyzes the researcher's experimental environment, providing personalized health and safety recommendations for researchers and laboratories. It also incorporates advanced automatic equipment control features.




AIoT EHS Platform

## Reagent Safety and Prevention Management System (RSPMS)

GT SCIEN's unique reagent safety prevention management system is equipped with a feature that prevents potential human errors. It monitors the usage of reagents in the laboratory, including details such as who, when, and how much they are used. Additionally, it proactively identifies and addresses risk factors by tracking the frequency of exposure to hazardous substances.

## LSPMS (Laboratory Safety and Prevention Management System) Features and Benefits

- Manage all safety equipment, including chemical storage cabinets and toxic gas purifiers, in one integrated system within the institution
  - Monitor equipment for error conditions and track filter replacements
  - Monitor the usage history of each equipment, device and chemicals

→ ▶ Convenient and easy to manage

- Enhance safety and save time with AIoT-enabled equipment control
- Seamless connectivity of AIoT-enables Equipment

→ ▶ Integrated for proactive risk prevention
- SmartLab Mate AI
- SmartLab Sensor AI
- AIoT chemical storage cabinet
- AIoT toxic gas purifier
- AIoT ductless fume hood

- Track chemical usage by type and duration, linked with balance
- Provide per-user access to organization equipment
- Share important information through safety-related notifications

→ ▶ Establish health and safety management plan based on chemical usage and researcher information

▶ Implement secure chemical and equipment management with user-based authority

## RSPMS (Reagent Safety and Prevention Management System) Features and Benefits

- Integrated management of all chemicals used within the institution
  - Efficient batch registration of extensive chemical information
  - Download chemical inventory lists organized by laboratory
  - Track usage history specific to each chemical
  - Notification of expiring chemicals
  - Access disposal history records

→ ▶ Pre-plan reagent usage before expiration

▶ Devise improvement strategies based on disposal cost assessment

▶ Minimize costs by eliminating duplicate purchases

- Access SDS for 20,000+ chemicals and upload supplier SDS

→ ▶ Ensure rapid response to dangerous situations

- Supports classification of chemicals by hazard class

→ ▶ Prevent accidents from mixing group of different hazard class of chemical

# What sets GT SCIEN's AIoT EHS solution apart?

## Have you ever had a similar experience?

### Researchers' requirement

1. Managing reagent history challenges
2. Tracking shared chemicals and consumables
3. Managing unexpected situations with chemical usage
4. Inevitable human errors beyond complete control

### Lab managers' requirement

1. Establishing a collective safety culture in the laboratory
2. Overseeing safety practices for each researcher
3. Overseeing laboratory chemical and consumable management
4. Research work hindered by paperwork

### EHS managers' requirement

1. Ensure safety across multiple laboratories
2. Over piling of reports
3. Communicating effectively with researchers
4. Managing documents effectively

Access to 20,000+ SDS Information

Monitor and purify toxic gases with sensors

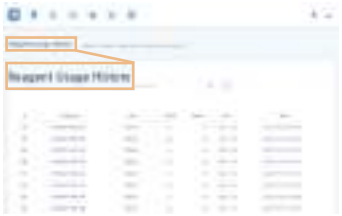
Hazard class storage Incompatibility warning

View frequently used chemicals

Tracking and manage chemicals and consumables

Automated activation of connected equipment upon chemical removal, minimizing errors.

eHs AIoT



Track reagent usage over time to assess health risks.

Researchers can assess chemical usage status

Handle risk factor notifications.

Check chemical expiration dates and view disposal history

Access filter replacement frequency and scale information data

Remotely operate equipment

Easily manage equipment history, filter replacement, chemical use and disposal.

# Innovating Lab EHS 4.0 : revolutionizing safety and efficiency

Enhance research safety and convenience with GT SCIEN's excellent products, aligning with global environmental considerations.

## Smart lab management devices

Introducing smart laboratory management devices that combines AI and IoT technology within safety equipment.

SmartLab Mate AI

SmartLab Sensor AI

Sensor Viewer

## Toxic gas purifier and chemical storage cabinets

Enhance chemical management safety with toxic gas removal equipment

AIoT Completely closed chemical storage (Two Door / One Door)

AIoT Ducted chemical storage (Two Door / One Door)

AIoT Completely closed refrigerated chemical storage (Two Door / One Door)

IoT Completely refrigerated chemical Storage premium (One Door)

Completely closed chemical storage (Two Door / One Door)

Ducted chemical storage (Two Door / One Door)

Completely closed chemical storage (Two Door / One Door)

Completely closed refrigerated chemical storage premium (One Door) premium

AIoT Vaccine storage (Two Door / One Door)

## Toxic gas purifiers

Introducing advanced toxc gas purifiers for efficient purification and removal of toxic gases generated from various chemicals.

AIoT Toxic gas purifier (Stationary/Portable)

AIoT Toxic gas purifier (Stationary/Portable)

Intelligent toxic gas purifier (Stationary/Portable)

## Hoods

Introducing high-performance hoods that rapidly exhausts or purifies chemicals producing substantial toxic gases, minimizing user exposure during chemical operations.

AIoT ductless fume hood

Intelligent ductless fume hood

All-in-one aluminum

General fume hood aluminum

Walk-in aluminum

Tabletop alumium

All-in-one steel

## Laboratory furniture

Introducing steel and aluminum profile laboratory grade furniture for various applications

Smart free-standing workstation

Free-standing workstation with chemical storage cabinet

Free-standing workstation with toxic gas purifier

Table based workbench with toxic gas purifier

Free-standing workstation with double-sided Work surface and shelving Island type

Table based workbench Island type

Free-standing workstation wall mounted

Table based workbench wall mounted

Sink table

Movable drawer

Movable cabinet

Corner table

## Special application based toxic gas purifiers

Specialized toxic gas purification units with expanded technology for specific applications

3D Printer toxic gas purifier (Single/ Double)

Osmium gas purification system (All-in-One / Half Type)

Smart testing booth

Flammable storage toxic gas purifier

## Chemical absorbent powder

Rapidly neutralize spilled chemicals for faster response and prevention of secondary accidents

TOGUARD®

**For your LAB INNOVATION.**

**Meet GT SCIEN, Meet your NEEDS.**

SmartLab Mate AI

# SmartLab Mate AI

## Laboratory safety equipment control

A control tower with a built-in Laboratory safety prevention management system (LSPMS) is designed to efficiently monitor and control the operational status of AIoT-based equipment connected to LSPMS on the lab bench.

### Secure and easy login

Three ways to login (face recognition, user card, and user account), to ensure user convenience

### Balance connectivity

Automatically record sample usage and remaining amount when the balance is connected

### SDS Immediate view

Text to speech or SDS view when taking samples in and out

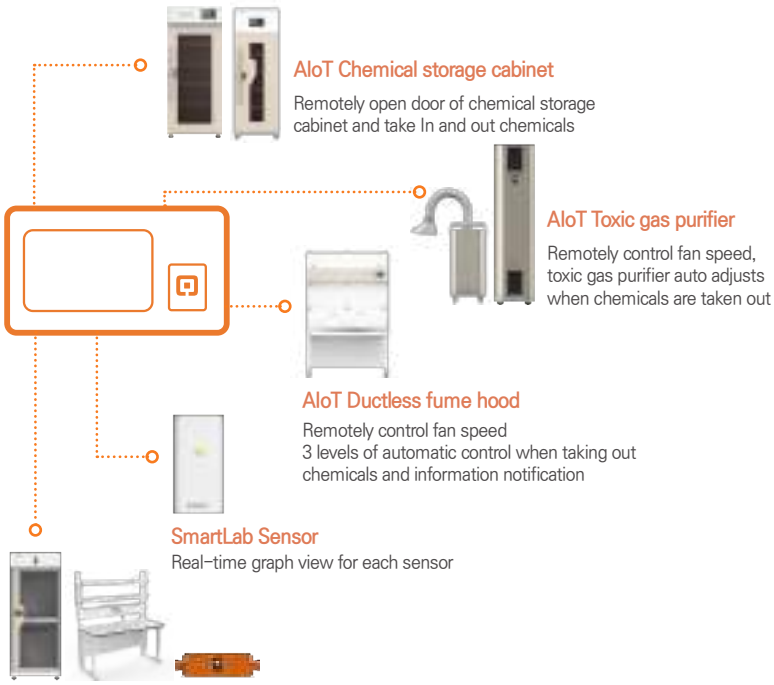
### AIoT for general storage

Effectively manage chemicals and consumables by assigning a specific storage cabinet

### Chemical, equipment, and Item tracking with detailed summary

View location of chemicals, supplies and connected equipment

## LSPMS Connectivity



### AIoT Chemical storage cabinet

Remotely open door of chemical storage cabinet and take In and out chemicals

### AIoT Toxic gas purifier

Remotely control fan speed, toxic gas purifier auto adjusts when chemicals are taken out

### AIoT Ductless fume hood

Remotely control fan speed
3 levels of automatic control when taking out chemicals and information notification

### SmartLab Sensor

Real-time graph view for each sensor

### 3D printer toxic gas purifier/Lab bench with toxic gas purifier/Toxic gas purifier box

Remotely control fan speed

| Category | SmartLab Mate AI |
|---|---|
| Model | GSCAI1S0 (balance connectivity) |
| Dimension (W x D x H, mm) | 385 x 45 x 168 |
| Weight | 2.93kg |
| Materia | SPC 1.6T |
| Voltage/Frequency | 220V, 50/60Hz |
| Power Consumption | 7.5W |

| Category | SmartLab Mate AI |
|---|---|
| Model | GSCAI1SB (without balance connectivity) |
| Dimension (W x D x H, mm) | 385 x 45 x 168 |
| Weight | 2.93kg |
| Materia | SPC 1.6T |
| Voltage/Frequency | 220V, 50/60Hz |
| Power Consumption | 7.5W |

• Compatible balances: METTLER TOLEDO, AnD, OHAUS, Sartorious

SmartLab Sensor AI

# Smart Sensor AI

## Real-time AIoT toxic gas monitoring device

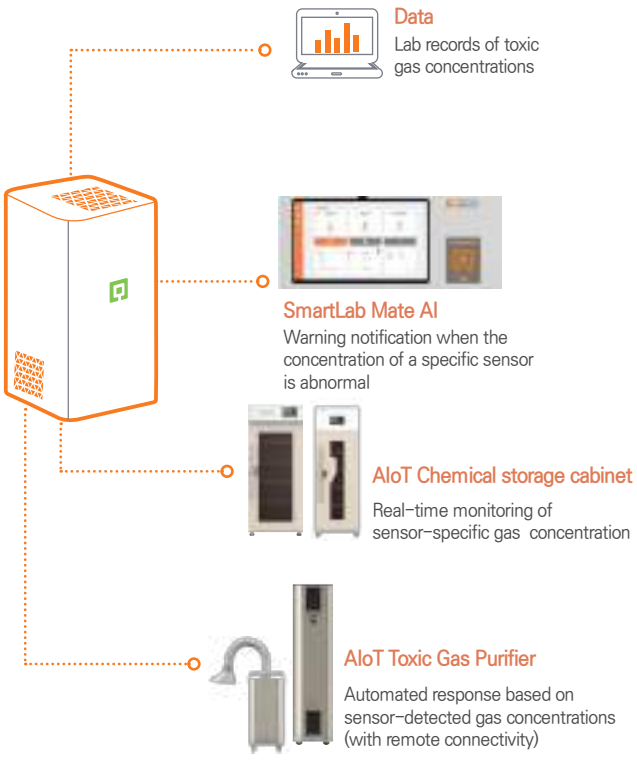
AIoT-based device for monitoring and purifying toxic gases in the laboratory, ensuring researcher safety.


**Real-time monitoring of hazardous gas levels**

Real-time monitoring of toxic gas levels triggers lighting color changes, enhancing safety in research environments with AIoT integration

Smart lab sensor viewer (optional)

## LSPMS Connectivity




| Category | SmartLab Sensor AI |
|---|---|
| Model | GSSAI1S09 |
| Dimension (W x D x H, mm) | 102.5 x 102 x 203.5 |
| Weight | 2kg |
| Materials | SPC 1.2T, White powder Coating 등 |
| Voltage/Frequency | 220V, 50/60Hz |
| Power Consumption | 18W |

• Sensors for measuring temperature, humidity, volatile organic compounds, formaldehyde, carbon dioxide, nitrogen oxides, ammonia, carbon monoxide, PM10, and PM2.5

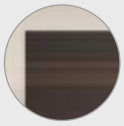
| Category | SmartLab Sensor Viewer |
|---|---|
| Model | GSVAC15S0 |
| Dimension (W x D x H, mm) | 365 x 290 x 180 |
| Weight | 2.93kg |
| Materials | PVC |
| Voltage/Frequency | 220V, 50/60Hz |
| Power Consumption | 7.5W |
| CPU | Dual-core Cortex-A72 up to 1.8GHz<br>Quad-core Cortex-A53 up to 1.4GHz |
| MEMORY | 4G |
| STORAGE | 32G |
| Operating System | Android 12 |
| Display | 15.6" TFT LCD |
| Resolution | 1920 x 1080 px |
| Brightness | 300 cd/m² |

TOGA® Safe Smart[AI]

# AIoT Completely enclosed chemical storage cabinet

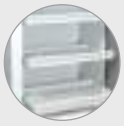
## Completely enclosed chemical storage cabinet that enables efficient chemical management with AIoT technology

Using domestic and foreign patented TOGA® filters, toxic gases are removed through circulation in a completely enclosed environment. AIoT technology enables real-time management of chemicals, monitoring of equipment, and automated operation of networked equipment to enhance the health and safety of researchers.



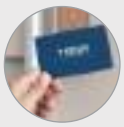
### UV protected polycarbonate viewing window

- Lightweight, impact-resistant, and durable
- UV-sensitive protection of chemicals



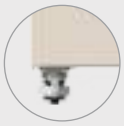
### Height adjustable sliding shelves

- Adjust height according to dimension of chemical container
- Sliding shelves provide safe access to chemicals



### Safety features for safe chemical management

Access can be restricted to verified researchers only using an NFC card, ensuring a single point of permission control.



### Casters provide both mobility and stability

Easy to move, and the structure allows for equipment leveling


1 Door

### 7" LCD touch screen

Effortlessly monitor stored reagent information, history, temperature, filter replacement date, and more

### AIoT Key features

1. User access management
2. Tracking of chemicals and disposal record manaement
3. Chemical expiration notification
4. Verify stored chemical information
5. Chemical hazard class classification
6. Pre-loaded 20,000+ chemical SDS
7. Access portal via web or app
8. User-specific usage logging



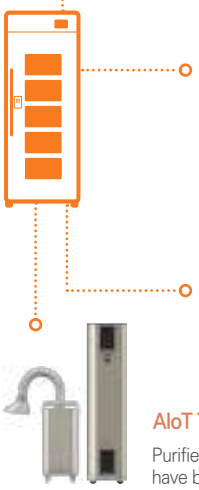
TOGA® Filter



Ductless

2 Door

## LSPMS Connectivity



### Data

Track chemicals and user-specific usage records

### SmartLab Mate AI

Remotely open chemical storage door and support chemical import/export and immediate viewing of SDS

### AIoT Ductless fume hood

Automatically operates when specific chemicals have been logged out of chemical storage cabinet

### AIoT Toxic gas purifier

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

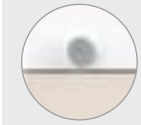
| Category | | TOGA® Safe Smart[AI] | |
|---|---|---|---|
| Model | | TOGA-AIGS01 (1 Door) | TOGA-AIGS02 (2 Door) |
| Dimension (W x D x H, mm) | Interior | 800 x 540 x 1950 | 1600 x 540 x 1950 |
| | Exterio | 690 x 500 x 1580 | 1480 x 500 x 1580 |
| Storage Capacity | | 1L/ 120 bottles | 1L/ 260 bottles |
| Control/Display Type | | 7" LCD Touch Screen | |
| AIoT Connectivity | | Available | |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter Change Frequency depend on chemical types, quantity, and concentrations) | |
| Sound Level | | 〈 50dB | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 20W | 50W |
| Weight | | 150kg | 250kg |
| Shelves | | 5 | 10 |

## TOGA® Safe

# Completely enclosed chemical storage cabinet

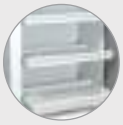
### Completely enclosed cabinet optimized for removing toxic gases inside.

Using domestic and foreign patented TOGA® filters, toxic gases are removed through circulation in a completely enclosed environment.



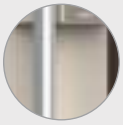
**Safety lock**

Secure chemical access



**Height adjustable sliding shelves**

- Adjust height according to dimension of chemical container
- Sliding shelves provide safe access to chemicals



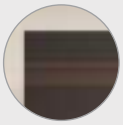
**Aluminum handle**

Unique handles for all types of users

**Casters provide both mobility and stability**

Easy to move, and the structure allows for equipment leveling


1 Door



**UV Protected polycarbonate Viewing Window**

- Lightweight, impact-resistant, and durable
- UV-sensitive protection of chemicals



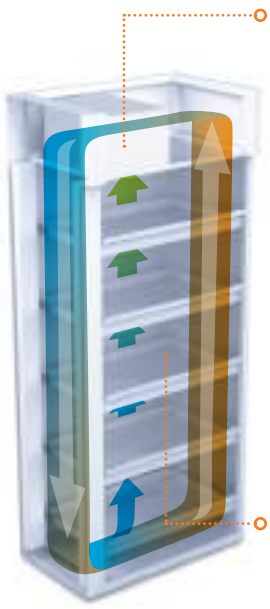
TOGA® Filter



Ductless

2 Door

## Airflow diagram



**Patented TOGA Filter**

KR Patent No : 10-0941666
US Patent No : US 8.845.971 B2
CN Patent No : 1345867

- 3 Types of filters ensure researcher safety by removing over 99% of toxic gases through various reactions
- Eliminates the risk of secondary pollutants like ozone during the removal process
- Customizable filters are available based on specific characteristics of the chemical

**Optimized fluid design for efficiency**

Completely enclosed circulation and differential airflow design

| Category | | TOGA® Safe | |
|---|---|---|---|
| Model | | TOGA -GS21 (1 Door) | TOGA -GS22 (2 Door) |
| Dimension (W x D x H, mm) | Exterio | 800 x 540 x 1950 | 1600 x 540 x 1950 |
| | Interior | 690 x 500 x 1580 | 1480 x 500 x 1580 |
| Storage Capacity | | 1L/ 120 bottles | 1L/ 260 bottles |
| Control/Display Type | | 7" LED Screen | |
| AIoT Connectivity | | - | |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter change frequency depend on chemical types, quantity, and concentrations) | |
| Sound Level | | 〈 50dB | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 20W | 47W |
| Weight | | 150kg | 250kg |
| Shelves | | 5 | 10 |

## Ducted Safe Smart[AI]

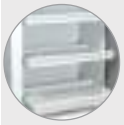
# AIoT Ducted chemical storage cabinet

### AIoT-controlled dust-free chemical storage cabinet

The AIoT chemical storage cabinet ensures safe ventilation of toxic gases through a duct system.
With real-time monitoring and automation through connectivity, it promotes researcher health and safety

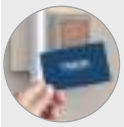
**UV Protected polycarbonate viewing window**

- Lightweight, impact-resistant, and durable
- UV-sensitive protection of chemicals



**Height sdjustable sliding shelves**

- Adjust height according to dimension of chemical container
- Sliding shelves provide safe access to chemicals

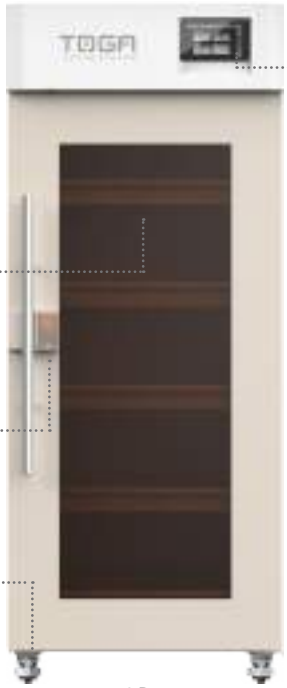


**Safety features for safe chemical management**

Access can be restricted to verified researchers only using an NFC card, ensuring a single point of permission control.

**Casters provide both mobility and stability**

Easy to move, and the structure allows for equipment leveling




1 Door

**7" LCD touch screen**

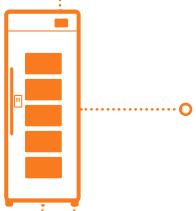
Effortlessly monitor stored reagent information, history, temperature, filter replacement date, and more

### AIoT Key features

1. User access management
2. Tracking of chemicals and disposal record manaement
3. Chemical expiration notification
4. Verify stored chemical information
5. Chemical hazard class classification
6. Pre-loaded 20,000+ chemical SDS
7. Access portal via web or app
8. User-specific usage logging

2 Door

## LSPMS Connectivity



**Data**

Track chemicals and user-specific usage records

**SmartLab Mate AI**

Remotely open chemical storage door and support chemical import/export and immediate viewing of SDS

**AIoT Ductless fume hood**

Automatically operates when specific chemicals have been logged out of chemical storage cabinet

**AIoT Toxic gas purifier**

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

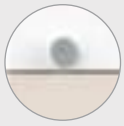
| Category | | Ducted Safe Smart[AI] | |
|---|---|---|---|
| Model | | TOGA-AIGSD01 (1 Door) | TOGA-AIGSD02 (2 Door) |
| Dimension (W x D x H, mm) | Exterior | 800 x 540 x 1950 | 1600 x 540 x 1950 |
| | Interior | 690 x 500 x 1580 | 1480 x 500 x 1580 |
| Storage Capacity | | 1L/ 120 bottles | 1L/ 260 bottles |
| Control/Display Type | | 7" LCD Touch Screen | |
| AIoT Connectivity | | Available | |
| Sound Level | | 〈 50dB | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 20W | 50W |
| Weight | | 135kg | 230kg |
| Shelving | | 5 | 10 |

Ducted Safe

# Ducted Chemical Storage Cabinet

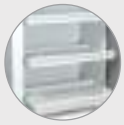
## Ducted chemical storage cabinet prevents laboratory dust from entering

while safely exhausting toxic gases generated by the chemical bottles through duct.



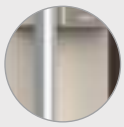
**Safety lock**

Secure chemical access



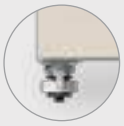
**Height adjustable sliding shelves**

- Adjust height according to dimension of chemical container
- Sliding shelves provide safe access to chemicals



**Aluminum handle**

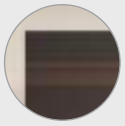
Unique handles for all types of users



**Casters provide both mobility and stability**

Easy to move, and the structure allows for equipment leveling


1 Door



**UV Protected polycarbonate viewing window**

- Lightweight, impact-resistant, and durable
- UV-sensitive protection of chemicals

**Options**

- TOGA Filter enables conversion of ducted type to completely enclosed type.

2 Door

## Airflow diagram

**Inlet equipped with Pre-filter**

- Filtration and reduction of dust

**Optimized fluid design for efficiency**

- Differential airflow structure enables seamless exhuast
- Internal duct structure ensures optimized flow path

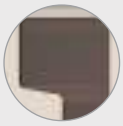
| Category | | Ducted Safe | |
|---|---|---|---|
| Model | | TOGA-GSD01 (1 Door) | TOGA-GSD02 (2 Door) |
| Dimension (W x D x H, mm) | Exterior | 800 x 540 x 1950 | 1600 x 540 x 1950 |
| | Interior | 690 x 500 x 1580 | 1480 x 500 x 1580 |
| Storage Capacity | | 1L/ 120 bottles | 1L/ 260 bottles |
| Control/Display Type | | 7" LED Display | |
| AIoT Connectivity | | - | |
| Sound Level | | 〈 50dB | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 35W | 35W |
| Weight | | 135kg | 230kg |
| Shelving | | 5 | 10 |

## TOGA® Fridge Smart (PRIMIUM)

# IoT Completely enclosed refrigerated chemical storage cabinet PREMIUM

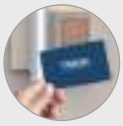
### Patented fully enclosed refrigerated chemical storage cabinet utilizes refrigeration technology to maintain uniformity and precision in temperature distribution

The patented internal circulation technology of the frigerated chemical storage cabinet ensures precise and uniform refrigeration temperature control in each compartment. It also includes a TOGA® Filter to eliminate toxic gases.
with AIoT technology integration, real-time chemical management and monitoring are enabled, providing a comprehensive solution for researchers' health and chemical management.



**Dual layer tempered and heated glass**

- Enhances insulation and prevents condensation
- Durable construction ensures reliability



**Safety features for safe chemical management**

Access can be restricted to verified researchers only using an NFC card, ensuring a single point of permission

**Efficient thermal performance and precise temperature control**

- In-house design of condenser and evaporation maximizes cooling efficiency for improved thermal performance
- Optimized flow path design maintains internal temperature within ±1°C

**Eco-friendly Insulation utilize**

- Eco-friendly insulation materials used with low toxic gas emissions in case of fire.
- Structural design maximizes thermal insulation.


1 Door

**7" LCD touch screen**

Real-time display and control of internal temperature allow easy monitoring of stored chemical information and history, including temperature and filter replacement dates

### IoT Key features

1. User access management
2. Tracking of chemicals and disposal record management
3. Chemical expiration notification
4. Verify stored chemical information
5. Chemical hazard class classification
6. Pre-loaded 20,000+ chemical SDS
7. Access portal via web or app
8. Temperature deviation alarm

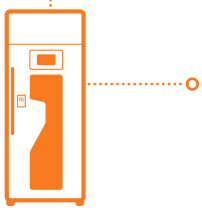


TOGA® Filter



Ductless

## LSPMS Connectivity



**Data**

Track chemicals and user-specific usage records

**SmartLab Mate AI**

Remotely open chemical storage door and support chemical import/export and immediate viewing of SDS

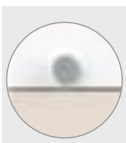
| Category | | TOGA® Fridge Smart (PRIMIUM) |
|---|---|---|
| Model | | TOGA-UGSR01 |
| Dimension (W x D x H, mm) | Exterior | 880 x 795 x 2070 |
| | Interior | 660 x 560 x 1450 |
| Storage Capacity | | 536L |
| Temperature Uniformity | | ±1℃ |
| Temperature Range | | 2 ~ 10℃ |
| Refrigeration System | Refrigerant Type | R-134a |
| | Compressor | 1/3 HP |
| | Condenser | 1/2 HP |
| | Evaporator | 1/2 HP |
| Defrost Type | | Automatic Defrost |
| Control/Display Type | | 7" LCD Touch Screen |
| AIoT Connectivity | | Available |
| Voltage/Frequency | | AC 220V, 60Hz |
| Power Consumption | | 1.1 kW |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter Change Frequency depend on chemical types, quantity, and concentrations) |
| Interior Material | | Stainless Steel |
| Shelving | | 5 |
| Weight | | 300kg |

## TOGA® Fridge (PRIMIUM)

# Completely enclosed refrigerated chemical storage cabinet PREMIUM

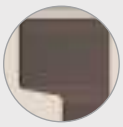
### Patented fully enclosed refrigerated chemical storage cabinet utilizes refrigeration technology to maintain uniformity and precision in temperature distribution

The patented internal circulation technology of the frigerated chemical storage cabinet ensures precise and uniform refrigeration temperature control in each compartment. It also includes a TOGA® filter to eliminate toxic gases.



**Safety lock**

Secure chemical access

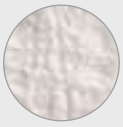


**Dual layer tempered and heated glass**

- Enhances insulation and prevents condensation
- Durable construction ensures reliability

**Efficient thermal performance and precise temperature control**

- In-house design of condenser and evaporation maximizes cooling efficiency for improved thermal performance
- Optimized flow path design maintains internal temperature within ±1°C



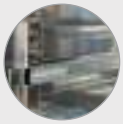
**Eco-friendly Insulation utilize**

- Eco-friendly insulation materials used with low toxic gas emissions in case of fire.
- Structural design maximizes thermal insulation.

1 Door

**7" LED Display**

- Real-time temperature monitoring and control.
- Automatic temperature controller for event detection.



**Stainless steel height-adjustable slide shelves**

- Durable stainless steel construction resists corrosion.
- Sliding shelf enables safe chemical handling.



TOGA® Filter



Ductless

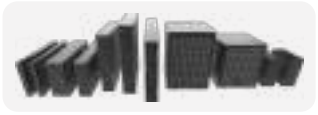
## Airflow diagram

Patented

**Refrigerated chemical storage technology**

Circulating cooled air while purifying toxic gases, minimizing temperature deviations in refrigeration

**Patented TOGA Flilter**



World's first refrigerated chemical storage with filter clean technology

**Completely enclosed internal airflow structure**

Creating uniform temperature distribution through vertical introduction and multi-directional circulation of cooled air.

| Category | | TOGA® Fridge (PRIMIUM) |
|---|---|---|
| Model | | TOGA-GSR01 |
| Dimension (W x D x H, mm) | Exterior | 880 x 795 x 2070 |
| | Interior | 660 x 560 x 1450 |
| Storage Capacity | | 536L |
| Temperature Uniformity | | ±1℃ |
| Temperature Range | | 2 ~ 10℃ |
| Refrigeration System | Refrigerant Type | R-134a |
| | Compressor | 1/3 HP |
| | Condenser | 1/2 HP |
| | Evaporator | 1/2 HP |
| Defrost Type | | Automatic |
| Control/Display Type | | 7" LED Display |
| Voltage/Frequency | | AC 220V, 60Hz |
| Power Consumption | | 800W |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter change frequency depend on chemical types, quantity, and concentrations) |
| Interior Material | | Stainless Steel |
| Shelving | | 5 |
| Weight | | 300kg |

GOOD DESIGN KOREA PIN UP DESIGN AWARDS 2019

## TOGA® Fridge Smart$^{AI}$

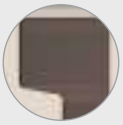
# AIoT Completely enclosed refrigerated chemical storage cabinet

### Completely enclosed refrigerated chemical storage cabinet with dual intake blowers and internal circulation for uniform temperature maintenance

The refrigerated chemical storage cabinet maintains uniform temperatures in each compartment using dual intake blowers and an internal circulation fan. It incorporates the patented TOGA® filter to remove toxic gases.
AIoT technology enables real-time management of chemicals, monitoring of equipment, and automated operation of networked equipment to enhance the health and safety of researchers.

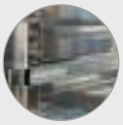
**2 Intake blowers**

- Enhanced temperature maintenance and purification capabilities with two intake blowers.



**Dual layer tempered and heated glass**

- Enhances insulation and prevents condensation
- Durable construction ensures reliability



**Stainless stool height adjustable slide shelves**

- Durable stainless steel construction resists corrosion.
- Sliding shelf enables safe chemical handling

**Casters provide both mobility and stability**

Easy to move, and the structure allows for equipment leveling

1 Door

**7" LCD touch screen**

Effortlessly monitor stored reagent information, history, temperature, filter replacement date, and more

### AIoT Key features

1. User access management
2. Tracking of chemicals and disposal record manaement
3. Chemical expiration notification
4. Verify stored chemical information
5. Chemical hazard class classification
6. Pre-loaded 20,000+ chemical SDS
7. Access portal via web or app
8. User-specific usage logging



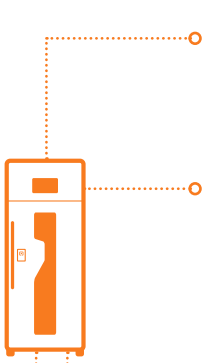
TOGA® Filter



Ductless

2 Door

## LSPMS Connectivity



**Data**

Track chemicals and user-specific usage records

**SmartLab Mate AI**

Remotely open chemical storage door and support chemical import/export and immediate viewing of SDS

**AIoT Ductless fume hood**

Automatically operates when specific chemicals have been logged out of chemical storage cabinet

**AIoT Toxic gas purifier**

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

| Category | | TOGA® Fridge Smart$^{AI}$ | |
|---|---|---|---|
| Model | | TOGA-UGSR11P (1 Door) | TOGA-UGSR12P (2 Door) |
| Dimension (W x D x H, mm) | Exterior | 640 x 850 x 1930 | 1260 x 850 x 1930 |
| | Interior | 550 x 700 x 1300 | 1170 x 700 x 1300 |
| Storage Capacity | | 500L | 1050L |
| Temperature Uniformity | | ±2℃ | |
| Temperature Range | | 2 ~ 10℃ | |
| Refrigeration System | Refrigerant Type | R-134a | |
| | Compressor | 1/3 HP | 1/2 HP |
| | Condenser | 1/3 HP | 1/2 HP |
| | Evaporator | 1/3 HP | |
| Defrost Type | | Automatic | |
| Control/Display Type | | 7" LCD Touch Screen | |
| AIoT Connectivity | | Available | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 850W | 1030W |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter Change Frequency depend on chemical types, quantity, and concentrations) | |
| Interior Material | | Stainless Steel | |
| Shelving | | 5 | 10 |
| Weight | | 150kg | 200kg |

GOOD DESIGN KOREA PIN UP DESIGN AWARDS 2019

## TOGA® Fridge

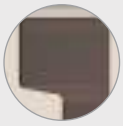
# Completely enclosed chemical storage cabinet

### Completely enclosed refrigerated chemical storage cabinet with dual intake blowers and internal circulation for uniform temperature maintenance.

The refrigerated chemical storage cabinet maintains uniform temperatures in each compartment using dual intake blowers and an internal circulation fan. It incorporates the patented TOGA® filter to remove toxic gases.

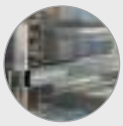
**2 Intake blowers**

Enhanced temperature maintenance and purification capabilities with two intake blowers.



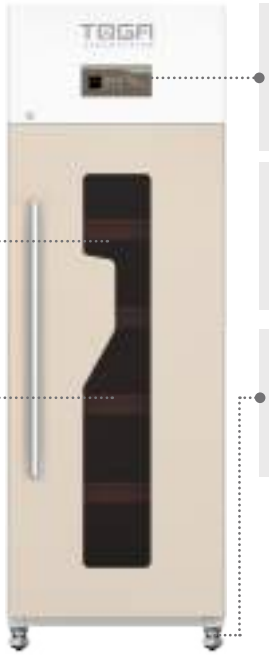
**Dual layer tempered and heated glass**

- Enhances insulation and prevents condensation
- Durable construction ensures reliability



**Stainless steel height-adjustable slide shelves**

- Durable stainless steel construction resists corrosion.
- Sliding shelf enables safe chemical handling.




1 Door

**7" LED display**

- Real-time temperature monitoring and control.
- Automatic temperature controller for event detection.

**Superb temperature uniformity**

To ensure consistent cooling temperatures in each shelving layer, two intake blowers and internal circulation fans are utilized

**Casters provide both mobility and stability**

Easy to move, and the structure allows for equipment leveling



TOGA® Filter



Ductless

2 Door

## Airflow diagram


- Ensuring uniform refrigeration temperatures in each compartment
- High quality insulation prevents condensation

Rapid temperature recovery and long-term stability in refrigeration

| Category | | TOGA® Fridge | |
|---|---|---|---|
| Model | | TOGA-GSR11P (1 Door) | TOGA-GSR12P (2 Door) |
| Dimension (W x D x H, mm) | Exterior | 640 x 850 x 1930 | 1260 x 850 x 1930 |
| | Interior | 550 x 700 x 1300 | 1170 x 700 x 1300 |
| Capacity | | 500L | 1050L |
| Temperature Uniformity | | ±2℃ | |
| Temperature Range | | 2 ~ 10℃ | |
| Refrigeration System | Refrigerant Type | R-134a | |
| | Compressor | 1/3 HP | 1/2 HP |
| | Condenser | 1/3 HP | 1/2 HP |
| | Evaporator | 1/3 HP | |
| Defrost Type | | Automatic | |
| Control/Display Type | | 7" LED Display | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power Consumption | | 850W | 1030W |
| Filter Replacement Frequency (Recommended) | | Yearly (Filter change frequency depend on chemical types, quantity, and concentrations) | |
| Interior Material | | Stainless Steel | |
| Shelving | | 5 | 10 |
| Weight | | 150kg | 200kg |

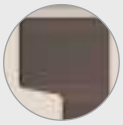
### TOGA® Vaccine Fridge Smart$^{AI}$

# AIoT Refrigerated vaccine storage cabinet

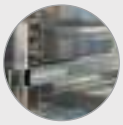
## Optimized cold chain vaccine refrigeration system for secure vaccine management

Optimal vaccine protection and temperature control: The advanced cold chain refrigerators ensure uniform refrigeration temperatures with two intake blowers and internal circulation fans. HEPA and TOGA® filters purifies the internal environment for maintaining vaccine quality, while real-time monitoring allows seamless management of vaccine data and usage status.

**2 Intake blowers**
Enhanced temperature maintenance and purification capabilities with two intake



**Dual layer tempered and heated glass**
- Enhances insulation and prevents condensation
- Durable construction ensures reliability



**Stainless steel height-adjustable slide shelves**
- Durable stainless steel construction resists corrosion.
- Sliding shelf enables safe chemical handling.

**Casters provide both mobility and stability**
Easy to move, and the structure allows for equipment leveling

1 Door

**7" LCD touch screen**
Effortlessly monitor stored reagent information, history, temperature, filter replacement date, and more

### AIoT Key features

1. User access management
2. Tracking of chemicals and disposal record manaement
3. Chemical expiration notification
4. Verify stored chemical information
5. Chemical hazard class classification
6. Pre-loaded 20,000+ chemical SDS
7. Access portal via web or app
8. User-specific usage logging



TOGA® Filter

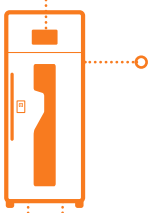


Ductless

2 Door

## LSPMS Connectivity

**Data**
Record usage status for each vaccine temperature record, equipment management record



**SmartLab Mate AI**
Support for taking out vaccines, remotely opening vaccine storage doors, and viewing vaccine information

**AIoT Ductless fume hood**
Automatically operates when specific chemicals are logged out of chemical storage cabinet

**AIoT Toxic gas purifier**
Automatically operates when specific chemicals are logged out of chemical storage cabinet

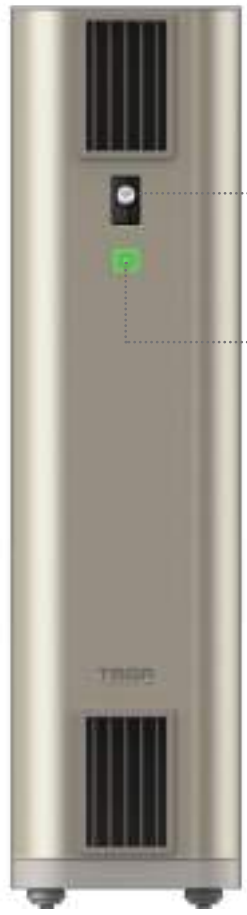
| Category | | TOGA® Vaccine Fridge Smart$^{AI}$ | |
|---|---|---|---|
| Model | | TOGA-UGSVR11 (1 Door) | TOGA-UGSVR11 (2 Door) |
| Dimension (W x D x H, mm) | Exterior | 640 x 850 x 1930 | 1260 x 850 x 1930 |
| | Interior | 550 x 700 x 1300 | 1170 x 850 x 1930 |
| Capacity | | 500L | 1050L |
| Material | Body Interior | SUS 443CT 0.4T | |
| | Body Exterior | SUS 430CT 0.5T | |
| | Door Body | SS400 Powder coating | |
| | Door Viewing Window | Dual layer tempered and heated glass 50W 1EA | Dual layer tempered and heated glass 50W 2EA |
| Shelving | Dimension/Qty | 465 x 545 x 60/5EA | 465 x 545 x 60/10EA |
| Temperature | Uniformity | 2~10°C | |
| | Rang | ± 2.0 ℃ | |
| Recommended Room Condition | | Temperature below 35°C humidity below 70% | |
| Control/Display | | 7" LCD touch screen VSPMS (Actual monitoring) | |
| Refrigeration System | Compressor | 1/3 HP | 1/2 HP |
| | Condenser | 1/3 HP | 1/2 HP |
| | Evaporator | 1/3HP (Air cooled type) | |
| | Refrigerant | R-134a | |
| Electrical Requirement | Voltage/ Frequency | AC220V, 50/60Hz | |
| | Power Consumption | 850W | 1030W |
| Defrost Type | | Automatic | |
| Filter Replacement Frequency (Recommended) | | Every 6 months | |

## TOGA® Puri Smart$^{AI}$ Pro

# AIoT Toxic gas purifier

### AIoT-enabled toxic gas purifier for efficient removal of harmful gases

With exceptional capability in eliminating diverse toxic gases, the AIoT-enabled toxic gas purifier seamlessly connects with SmartLab Sensor AI to automatically remove toxic gases in extensive laboratory settings, ensuring the health and safety of researchers.



Stationary

**4.3" LCD touch screen**

- Intuitive user interface for enhanced user convenience
- Adjustable fan speed, temperature/ humidity display, and filter replacement indicator.

**AIoT Integrated**

Seamless integration with equipment for automated control, including web or app-based access

**Flexible arm with 360° rotational capability**

360° articulating arm for easy positioning of the snorkel at the source of toxic gas emissions.

**Toxic gas monitoring**

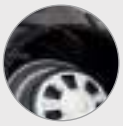
Automated operation based on continuous monitoring of VOC levels within the laboratory

**Retractable power cord**

Convenient storage and safe usage

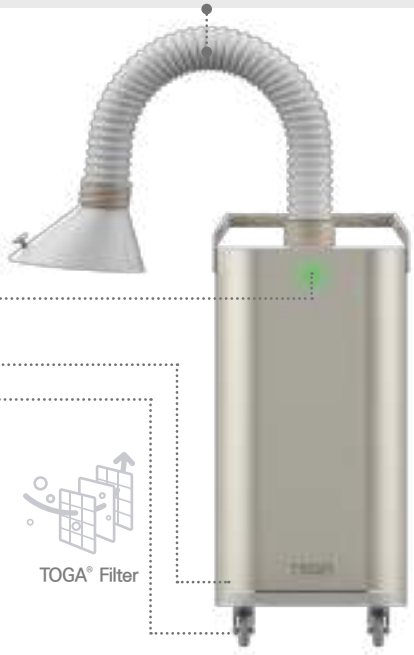
**Versatile 360° swivel casters**

Fast and precise mobility with 360° swivel casters



**Durable chemical-resistant motor with powerful suction**

- Five-Speed airflow control available based on air quality level
- Enhanced durability ensured through the use of chemical-resistant blowers

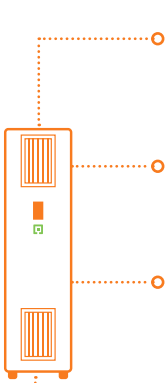




TOGA® Filter

Portable

## LSPMS Connectivity



**Data**

VOC record,
equipment management record

**SmartLab Mate AI**

Control fan speed remotely
Automatic operation when taking out chemicals

**SmartLab Sensor AI**

If the concentration of the set sensor among the built-in sensors is higher than the standard value, the toxic gas purifier automatically operates.

**AIoT Chemical storage cabinet**

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

**Option**

- Option to replace HEPA filter with ULPA filter
- Optional UVC lamp: Eliminates bacteria and viruses

| Cateogry | TOGA® Puri Smart$^{AI}$ Pro | |
|---|---|---|
| Model | TOGA-M01AI | TOGA-S02AI |
| Dimension (W x D x H, mm) | 450 x 450 x 950 | 450 x 450 x 1835 |
| Air Volume | 10㎥/min | - |
| Area Coverage | - | 79㎡ |
| Material | Aluminum Profile + SPC 1.2T | |
| Weight | 80kg | 140kg |
| Voltage/Frequency | 220VAC, 50/60Hz | |
| Power Consumption | 169W | |

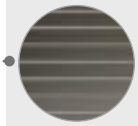
### TOGA® Puri Smart$^{AI}$

# AIoT Toxic gas purifier

## AIoT-enabled toxic gas purifier for efficient removal of harmful gases

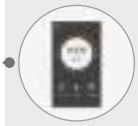
Optimal vaccine protection and temperature control: The advanced cold chain refrigerators ensure uniform refrigeration temperatures with two intake blowers and internal circulation fans. HEPA and TOGA® filters purifies the internal environment for maintaining vaccine quality, while real-time monitoring allows seamless management of vaccine data and usage status.

Stationary



**Wide return vent**

Wide return vent provides efficient capture of dispersed toxic gases in open spaces



**4.3" LCD Touch screen**

- Intuitive user interface for enhanced user convenience
- Adjustable blower speed, temperature/ humidity display, and filter replacement indicator.

**Toxic gas monitoring**

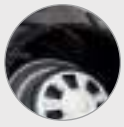
Automated operation based on continuous monitoring of VOC levels within the laboratory.

**Retractable power cord**

Convenient storage and safe usage

**Versatile 360° swivel casters**

Fast and precise mobility with 360° swivel casters



**Durable chemical-resistant motor with powerful suction**

- Five-Speed airflow control available based on air quality level
- Enhanced durability ensured through the use of chemical-resistant blowers.

**AIoT Integrated**

Seamless integration with equipment for automated control, including web or app-based access

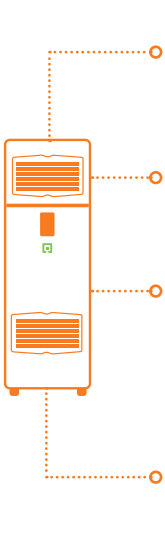
**Flexible arm with 360° rotational capability**

360° articulating arm for easy positioning of the snorkel at the source of toxic gas emissions.

TOGA® Filter

Portable

## LSPMS Connectivity



**Data**

VOC record, equipment management record

**SmartLab Mate AI**

Control fan speed remotely automatic operation when taking out chemicals

**SmartLab Sensor AI**

If the concentration of the set sensor among the built-in sensors is higher than the standard value, the toxic gas purifier automatically operates.

**AIoT Chemical storage cabinet**

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

| Cateogry | TOGA® Puri Smart$^{AI}$ |
|---|---|
| Model | TOGA-S02D-AI |
| Dimension (W x D x H, mm) | 500 x 450 x 1770 |
| Absorption Efficiency | Absorbs over 99.7% of toxic gases, VOCs, acid, base, and fumes |
| Filter Replacement Frequency (Recommended) | Yearly (Filter change frequency depend on chemical types, quantity, and concentrations) |
| Area Coverage | 79.2m² |
| Voltage/Frequency | AC 220V, 50/60Hz |
| Power Consumption | 169W |
| Blower Speed | 1-5 |
| Weight | 130kg |

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## TOGA® Puri Smart[AI] Pro

# AIoT Toxic gas purifier

## AIoT-enabled toxic gas purifier for efficient removal of harmful gases

With exceptional capability in eliminating diverse toxic gases, the AIoT-enabled toxic gas purifier seamlessly connects with SmartLab Sensor AI to automatically remove toxic gases in extensive laboratory settings, ensuring the health and safety of researchers.

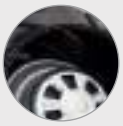
Stationary

### 7" LED Display

Adjustable fan speed for blower control, programmable operation scheduling, and VOC contamination level indication

### Scheduled on/off timer feature

Scheduled on/off feature for creating a safe and comfortable environment



### Durable chemical-resistant motor with powerful suction

- Five-speed airflow control available based on air quality level
- Enhanced durability ensured through the use of chemical-resistant blowers

### Retractable power cord

Convenient storage and safe usage

### Versatile 360° swivel casters

Fast and precise mobility with 360° swivel casters



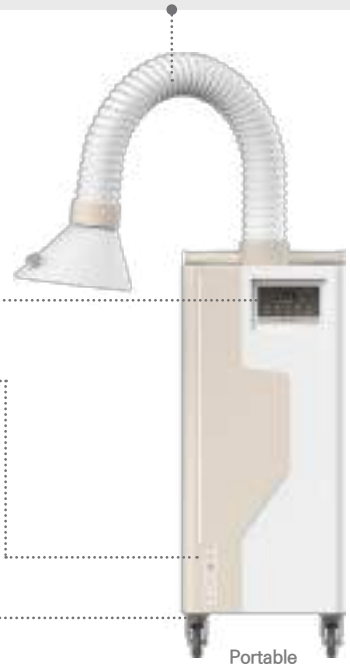
TOGA® Filter


### Toxic gas monitoring

Automatic operation based on VOC concentration monitoring within the laboratory.

### Flexible arm with 360° rotational capability

360° articulating arm for easy positioning of the snorkel at the source of toxic gas emissions.



Portable

| Category | TOGA® Puri Intelligent | |
|---|---|---|
| Model | TOGA-S02D | TOGA-M01D |
| Dimension (W x D x H, mm) | 500 x 450 x 1770 | 400 x 400 x 960 |
| Absorption Efficiency | Absorbs over 99.7% of toxic gases, VOCs, acid, base, and fumes | |
| Filter Replacement Frequency (Recommended) | Yearly (Filter change frequency depend on chemical types, quantity, and concentrations) | |
| Air Volume | - | $10m^3$/min |
| Area Coverage | $79.2m^2$ | - |
| Power Consumption | 169W | |
| Voltage/Frequency | AC 220V, 50/60Hz | |
| Blower Speed Range | 1-5 | |
| Weight | 110kg | 65kg |

## TOGA® Hood Smart$^{AI}$

# AIoT Ductless fume hood

### AIoT-Enabled ductless fume hood for convenient and efficient operation

By leveraging AIoT capabilities, the ductless fume hood automatically activates the blower and lighting when specific chemicals are logged out, guiding their usage within the ductless fume hood to minimize exposure to toxic gases, ensuring the health and safety of researchers.

**4.3" LCD touch screen**

- Intuitive user interface for enhanced user convenience
- Adjustable blower speed, temperature/ humidity display, and filter replacement indicator.

**Three-sided transparent acrylic panel**

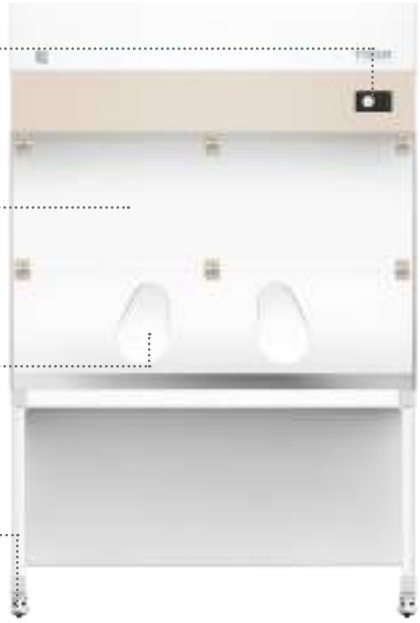
Optimal visibility achieved by applying transparent acrylic panels to three sides, facilitating easy observation of the work surface

**Hinged sash with air Inlet**

Ergonomically designed hole on the front section for easy inflow of external air and enhanced convenience of experimental activities for the operator.

**Casters provide both mobility and stability**

Ductless fume hood without ductwork, allowing easy mobility and flexible positioning according to the laboratory's structure for convenient use in desired locations.



**AIoT Integrated**

Seamless integration with equipment for automated control, including web or app-based access

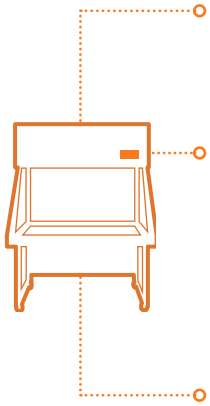


TOGA® Filter



Ductless

## LSPMS Connectivity



**Data**

Equipment Management record

**SmartLab Mate AI**

Control fan speed remotely
Automatic operation (3 steps) when taking out chemicals

**AIoT Chemical storage cabinet**

Purifier operates automatically when specific chemicals have been logged out of chemical storage cabinet

| Cateogry | | TOGA® Hood Smart$^{AI}$ | |
|---|---|---|---|
| Model | | TOGA-DFH900-AI | DFH1200-AI |
| Dimension (W x D x H, mm) | Exterior | 900 x 700 x 1170 | 1200 x 700 x 1170 |
| | Interior | 884 x 660 x 710 | 1184 x 660 x 710 |
| | With stand | 900 x 700 x 1945 | 1200 x 700 x 1945 |
| Weight | | 124kg | 144kg |
| Exterior material | | Steel (steel 1.2T) powder-coated, acrylic | |
| Stand | | 50 mm x 50 mm x 1.4T each pipe | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power consumption | | 215W | |
| Lighting | | LED Light (11W) | |

## TOGA® Hood Intelligent

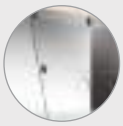
# Intelligent ductless fume hood

### Ductless fume hood that removes harmful gases and enables safe work with portability

By utilizing patented TOGA® filters, the ductless fume hood enables seamless mobility without duct connections.
It effectively removes hazardous gases produced during experiments, ensuring the health and safety of researchers.

**7" LED display**

Adjustable fan speed for blower control, programmable operation scheduling, and VOC contamination level indication.



**Three-sided transparent acrylic panel**

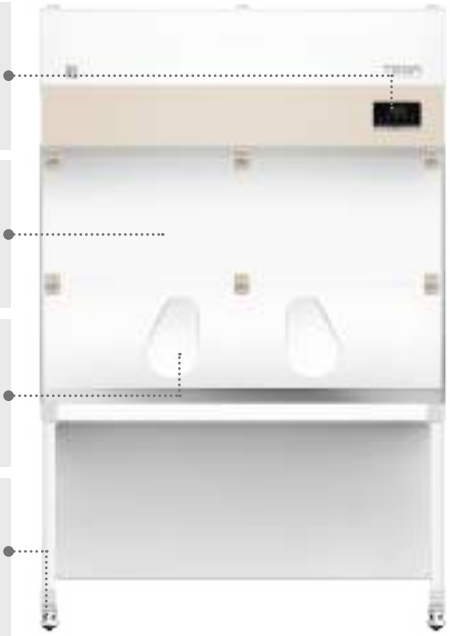
Optimal visibility achieved by applying transparent acrylic panels to three sides, facilitating easy observation of the work surface

**Hinged sash with hole air intake**

Ergonomically designed hole on the front section for easy inflow of external air and enhanced convenience of experimental activities for the operator.

**Casters provide both mobility and stability**

Ductless fume hood without ductwork, allowing easy mobility and flexible positioning according to the laboratory's structure for convenient use in desired locations.



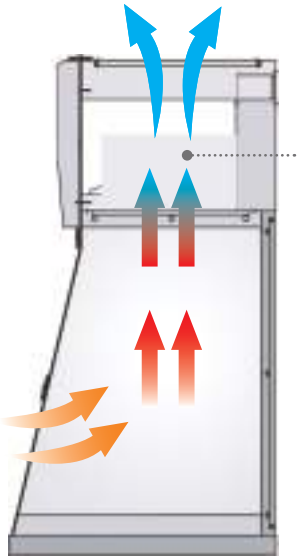


TOGA® Filter



Ductless

## Airflow diagram




| Cateogry | | TOGA® Hood Intelligent | |
|---|---|---|---|
| Model | | TOGA-DFH900-R | DFH1200-R |
| Dimension (W x D x H, mm) | Exterior | 900 x 700 x 1170 | 1200 x 700 x 1170 |
| | Interior | 884 x 660 x 710 | 1184 x 660 x 710 |
| | With stand | 900 x 700 x 1945 | 1200 x 700 x 1945 |
| Weight | | 124kg | 144kg |
| Exterior material | | Steel (steel 1.2T) powder-coated, acrylic | |
| Stand | | 50 mm x 50 mm x 1.4T each pipe | |
| Voltage/Frequency | | AC 220V, 50/60Hz | |
| Power consumption | | 215W | |
| Lighting | | LED Light (11W) | |

# GT SCIEN Ducted fume hood selection guide

## Ducted fume hoods that removes harmful gases and enables safe work environment

Material selection

**Steel fume hood**

**Aluminum profile fume hood**

Line up

**All-in-one**

Basic type of ducted fume hood

**Without stand**

All experiments using chemicals are carried out in a fume hood without a stand to provide a safe experimental environment.

**Walk-in**

Move large experimental equipment inside the fume hood for safe experiments

**Table top**

Raised on free-standing double sided or single sided work surfaces

### Variety

Offers a variety of types that can be selected according to the experimental environment and user convenience.

### Provides efficiency

By-pass louver reduces room air recoil and boosts exhaust capacity

### Provides safety

- Can be safely used with corrosion-resistant fixtures.
- The baffle plate structure effectively exhausts the air inside the hood.
- Sliding doors allow safe experimentation according to working conditions.

## GT SCIEN Aluminum profile fume hood key features

Durable and elegant aluminum frame


Exhaust capacity that protects the safety of researchers

Ergonomic design provides user convenience

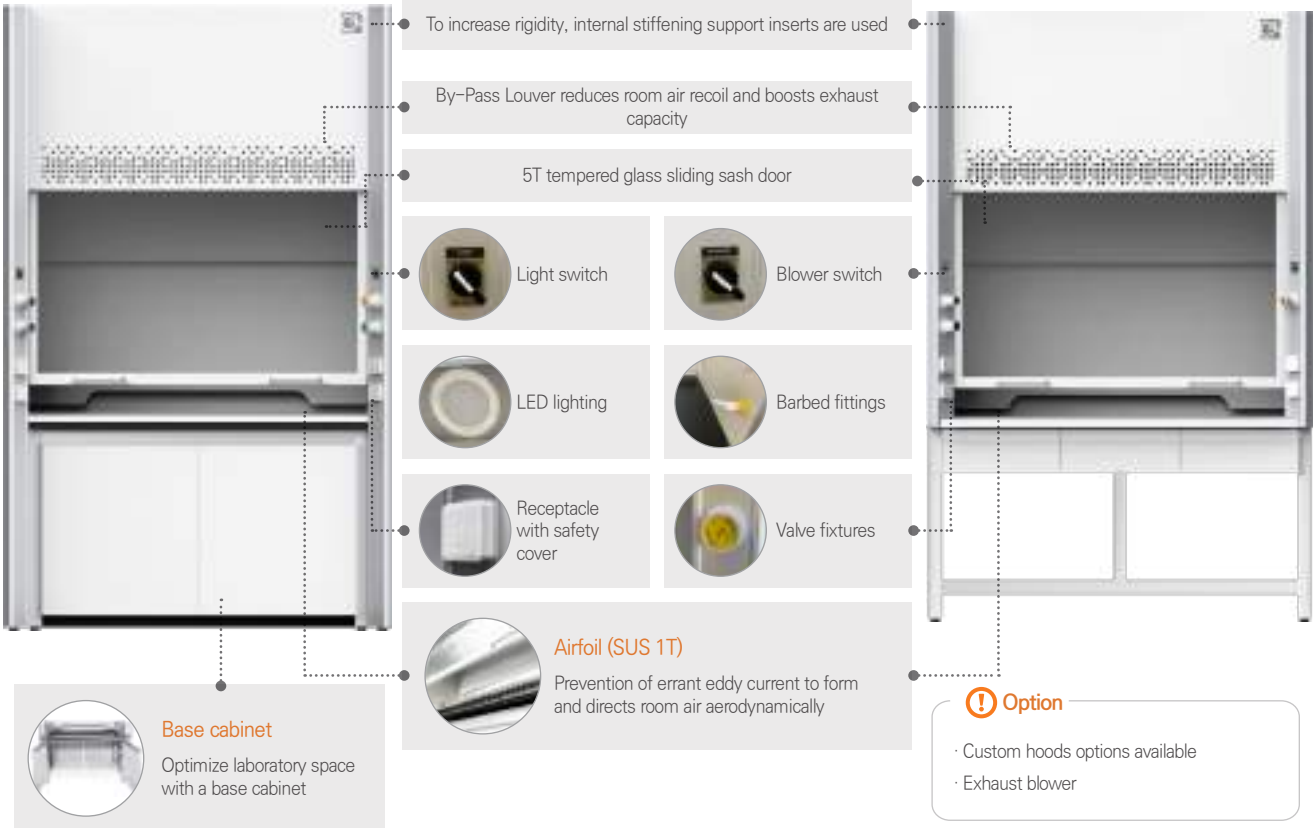
# Ducted fume hoods

## Aluminum profile hood : all-in-one

Designed for various applications, the most basic ducted fume hood effectively eliminates toxic gases by quickly exhausting them.

## Aluminum profile fume hood : without stand

All experiments using chemicals are carried out in a fume hood without a stand to provide a safe experimental environment.




| Cateogry | | Aluminum Profile Hood (All – in- one/ Without stand ) | | | | |
|---|---|---|---|---|---|---|
| All-in-one | | GAHP-G112 | GAHP-G115 | GAHP-G118 | GAHP-G121 | GAHP-G124 |
| Without stand | | GAHP-G012 | GAHP-G015 | GAHP-G018 | GAHP-G021 | GAHP-G024 |
| Dimension (W x D x H, mm) | Exterior | 1200 x 800 x 2350 | 1500 x 800 x 2350 | 1800 x 800 x 2350 | 2100 x 800 x 2350 | 2400 x 800 x 2350 |
| | Interior | 1000 x 600 x 1030 | 1300 x 600 x 1030 | 1500 x 600 x 1030 | 1800 x 600 x 1030 | 2100 x 600 x 1030 |
| Valve fixtures | Gas | 1 | 1 | 1 | 1 | 1 |
| | Water | 1 | 1 | 1 | 2 | 2 |
| | Air | 1 | 1 | 1 | 1 | 1 |
| Outlet | | 4 | 4 | 4 | 4 | 4 |
| Cup sink | | 1 | 1 | 1 | 2 | 2 |
| Lighting(30W) | | 1 | 1 | 1 | 2 | 2 |
| Interior material | | Phenolic laminate 4T | | | | |
| Exhaust vent | | 200ø / 250ø / 300ø | | | | |
| Voltage/frequency | | AC220V, 50/60Hz | | | | |

# Ducted type fume hood lineup

## Aluminum profile ducted fume hood – table to

Can be placed on a free-standing double-sided (island or center type) or single-sided work surface. For the island or center type, the inside of the hood can be observed through side windows.


Light switch


Receptacle with safety cover


Blower switch


LED lighting

To increase rigidity, internal stiffening support inserts are used

5T tempered glass side viewing windows

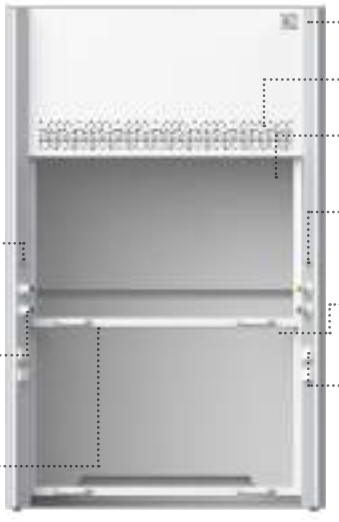
5T tempered glass sliding sash door

By-pass louver reduces room air recoil and boosts exhaust capacity

| Cateogry | Center type | | | Island type | |
|---|---|---|---|---|---|
| | GAHP-C024 | GAHP-C030 | GAHP-C036 | GAHP-S015 | GAHP-S018 |
| Dimension (W x D x H, mm) | 2400 x 1500 x 1550 | 3000 x 1500 x 1550 | 3600 x 1500 x 1550 | 1500 x 750 x 1550 | 1800 x 750 x 1550 |
| Outlet | 8 | 8 | 8 | 4 | 4 |
| Lighting (30W) | 4 | 4 | 4 | 1 | 1 |
| Interior material | Phenolic laminate 4T | | | | |
| Exhaust vent | 200ø / 250ø / 300ø | | | | |
| Voltage/frequency | AC220V, 50/60Hz | | | | |

## Aluminum profile fume hood-walk-in

To safely conduct experiments within a spacious area, large experimental equipment that generates toxic gases is placed inside the walk-in fume hood.



To increase rigidity, internal stiffening support inserts are used

By-pass louver reduces room air recoil and boosts exhaust capacity

5T tempered glass sliding sash door


Light switch


Barbed fittings


Receptacle with safety cover


Sash stoppers


Blower switch


Valve fixtures


Shock absorber

| Cateogry | | GAHP-W115 | GAHP-W118 | GAHP-W121 | GAHP-W124 |
|---|---|---|---|---|---|
| Dimension (W x D x H, mm) | Exterior | 1500 x 800 x 2350 | 1800 x 800 x 2350 | 2100 x 800 x 2350 | 2400 x 800 x 2350 |
| | Interior | 1300 x 600 x 1800 | 1600 x 600 x 1800 | 1900 x 600 x 1800 | 2100 x 600 x 1800 |
| Valve fixtures | Gas | 1 | 1 | 1 | 1 |
| | Water | 2 | 2 | 2 | 2 |
| | Air | 1 | 1 | 1 | 1 |
| Outlet | | 4 | 4 | 4 | 4 |
| Lighting (30W) | | 1 | 1 | 2 | 2 |
| Interior material | | Phenolic laminate 4T | | | |
| Exhaust vent | | 200ø / 250ø / 300ø | | | |
| Voltage/frequency | | AC220V, 50/60Hz | | | |

## TOGA® Hood Intelligent

# Ducted fume hood lineup

## Steel fume hood

Durable fume hood constructed with materials that optimize the performance by effectively eliminates toxic gases by quickly exhausting them.

Exterior: powder coated steel
Interior: phenol laminate

By-pass louver reduces room air recoil and boosts exhaust capacity

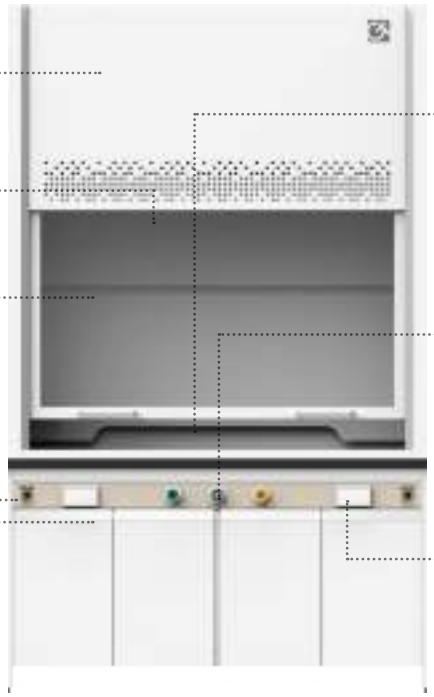
5T tempered glass sliding sash door

Steel base

Spacious base cabinets

**Option**

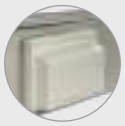
· Custom hoods options available
· Exhaust blower



**Airfoil (SUS 1T)**

Prevention of errant eddy current to form and directs room air aerodynamically

Supply fixture (stopcock)
(Gas / Water / Air)



Receptacle with safety cover

| Cateogry | | Steel fume hood | | | | |
|---|---|---|---|---|---|---|
| Steel type | | GFHP-1200 | GFHP-1500 | GFHP-1800 | GFHP-2100 | GFHP-2400 |
| Dimension (W x D x H, mm) | Exterior | 1200 x 800 x 2350 | 1500 x 800 x 2350 | 1800 x 800 x 2350 | 2100 x 800 x 2350 | 2400 x 800 x 2350 |
| | Interior | 1000 x 630 x 1030 | 1300 x 630 x 1030 | 1600 x 630 x 1030 | 1900 x 630 x 1030 | 2200 x 630 x 1030 |
| Valve fixtures | Gas | 1 | 1 | 1 | 2 | 2 |
| | Water | 1 | 1 | 1 | 2 | 2 |
| | Air | 1 | 1 | 1 | 2 | 2 |
| Cup sink | | 1 | 1 | 1 | 2 | 2 |
| Lighting (30W) | | 1 | 1 | 1 | 2 | 2 |
| Outlet | | 220V 2ea | | 220V 4ea | | |
| Exterior material | | Steel (Steel1.2T) powder-coated, | | | | |
| Interior material | | 4T Phenolic laminate | | | | |
| Door | | 5T Tempered glass (up-down sliding door) | | | | |
| Stand | | 50 mm x 50 mm x 1.4T each pipe | | | | |
| Airfoil | | SUS 1T | | | | |
| Exhaust vent | | 200ø / 250ø / 300ø | | | | |
| Voltage/frequency | | AC220V, 50/60Hz | | | | |

## TOGA® Puri Printer Smart

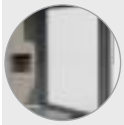
# 3D Printer toxic gas purifier

### Custom toxic gas purifier filters and purifies harmful gases produced by 3D printers

3D printers offer the advantage of transforming ideas into reality across various fields. However, they also pose risks due to the emission of harmful substances from materials used. Our special toxic gas purifier, equipped with a patented TOGA® filter, safely eliminates these harmful gases generated during 3D printer operation.

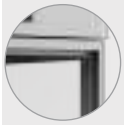
**4.3" LCD touch screen**

- Intuitive UI for user convenience
- blower air volume (blower speed) control, display of temperature/humidity and filter replacement



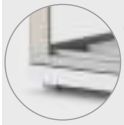
**Transparent viewing window**

Sturdy with high-strength polycarbonate transparent window provides for easy viewing of printed work



**Aluminum frame**

sturdy by using an aluminum frame and easy view of 3D printing sample



**Convenient mobility and secure fixation**

- Easy-to-move casters (TOGA-TDS02 Model)
- Anti-slip rubber feed (TOGA-TDS01 Model)

Double

**Turntable shelf**

No risk of overturning due to a shift in center of gravity by applying 360° rotating turntable type shelf

**IoT Integrated**

Access portal via web or app



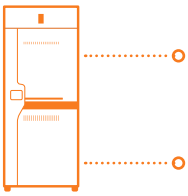
TOGA® Filter



Ductless

Single

## LSPMS Connectivity



**Data**

Temperature, humidity record and equipment management record

**SmartLab Mate AI**

Control fan speed remotely, counsumable management

## Airflow diagram

| Category | | TOGA® Puri Printer Smart | |
|---|---|---|---|
| Model | | TOGA-TDS01 | TOGA-TDS02 |
| Dimension (W x D x H, mm) | Exterior | 760 x 935 x 1150 | 760 x 935 x 1920 |
| | Interior | 650 x 760 x 80 | ea 650 x 760 x 731 |
| Shelf(size) | | 1 shelf(450 x 450 mm) | 2 shelves(450 x 450 mm) |
| Material | | Aluminum frame, PC transparent viewing window | |
| Voltage/frequency | | AC220V, 60Hz | |
| Control/display type | | 4.3" LCD Touch screen (Adjustable blower speed, temperature/ humidity display, and filter replacement indicator.) | |
| Output | | 72W | |
| Weight | | 110kg | 150kg |

## TOGA® Puri Osmium Intelligent

# Osmium gas purifier

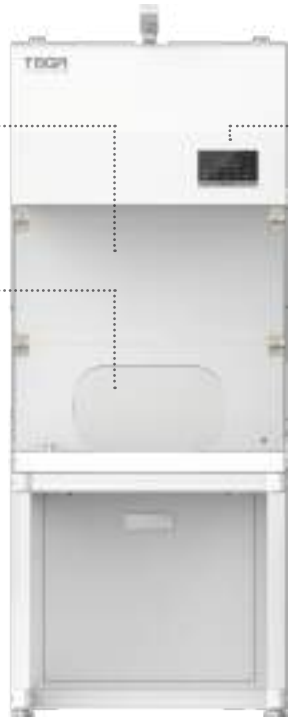
### Osmium gas purification equipment that purifies 99% of osmium gas, a hazardous substance used in pretreatment applications

By utilizing patented TOGA® filters, the ductless fume hood enables seamless mobility without duct connections.
It effectively removes hazardous gases produced during experiments, ensuring the health and safety of researchers.

**3-sided transparent polycarbonate (PC)**
Transparent PC is applied to three sides for easy observation of the work surface, securing an optimal view.

**Hole air intake**
Ergonomically designed hole on the front section for easy inflow of external air and enhanced convenience of experimental activities for the operator.

**Scheduled on/off Timer Feature**
Scheduled on/off feature for creating a safe and comfortable environment



All-in-One

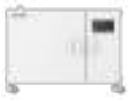
**7" LED display**
Adjustable fan speed for blower control, programmable operation scheduling, and VOC contamination level indication



TOGA® Filter

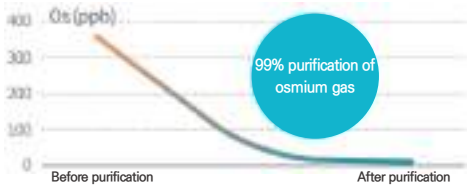


Ductless



Half Type

## Osmium gas dedicated TOGA Filter purification function




Purification of more than 99% of toxic gases through two-step reduction and adsorption process

## Toxic gas purification airflow

❶ First stage purification
❷ Second stage purificatio
❸ Air flow creates a negative pressure environment

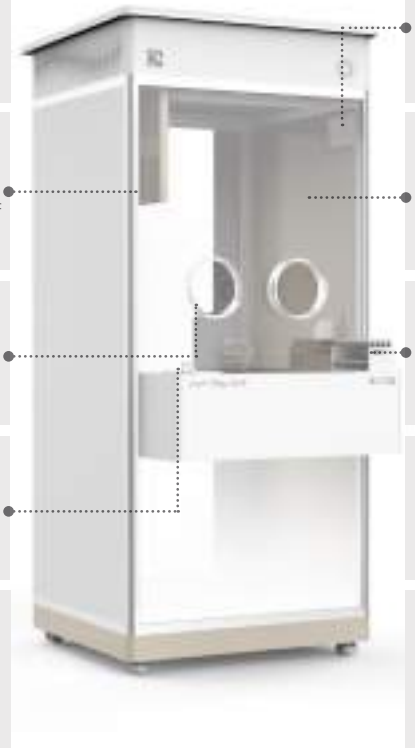
| Cateogry | | TOGA® Puri Osmium Intelligent | |
|---|---|---|---|
| Model | | TOGA-SVS01 (All-in-One) | TOGA-SVE01 (Half Type) |
| Dimension (W×D×H, mm) | Exterior | 700 x 610 x 1760 | 800 x 300 x 582 |
| | Interior | 684 x 450 x 600 | 720 x 280 x 440 |
| | Window | 700 x 400 x 8.0T (polycarbonate) | - |
| Material | | SPC 1.2T : White powder coating | |
| Capacity | | 185L | 88L |
| Control/Display type | | 7" LED Screen | |
| Connection port | | NW25(Vacuum-Type) | |
| Voltage/frequency | | AC110V 50/60Hz | |
| Caster | | Foot Master 40F, 4EA | |
| Lighting | | - | LED(11W) |
| Upper board | | - | SUS 304 |

## Smart Testing Booth

# Smart testing booth

### A walk-through test booth that secures the safety of medical staff during bacterial disease tests

It is a highly reliable testing booth equipped with various functions for quick and efficient testing, diagnosis, and infection protection for medical staff who test viruses and other bacterial diseases using HEPA Filter and Pre-Filter.

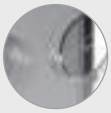


**HEPA Filter + PRE Filter**

Booth protects medical staff by purifying dust and bacteria continuously.

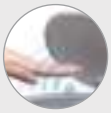
**Slim/window mounted AC and heating unit**

Ensures comfort regardless of seasonal temperature fluctuations through the use of a high-efficiency slim cooling and heating unit



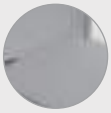
**8-inch latex glove access port**

Balances safety and usability with a compact size that does not hinder the test-diagnosis process



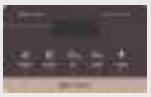
**Automatic lid opening motion sensor**

Enhances safety for medical staff and test subjects while enabling rapid and efficient diagnosis-examination through automatic hand motion detection.



**Ergonomically-based 15° inclined footrest**

Promotes natural movement of the user's center of gravity, minimizing fatigue in the back, shoulders, and neck during prolonged use.



**7" LED display**

The user-friendly intelligent touch panel offers easy operation, providing information and controls for blower speed, light usage, and filter status.

**Transparent polycarbonate (PC) viewing window**

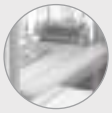
Combining lightweight, strong, and excellent self-extinguishing properties, along with insulation and lighting features, this booth ensures a safe and comfortableenvironment.

**Multifunctional workbench**

Optimized multi-functional workbench designed specifically for testing-diagnosis processes, featuring glove ports and an ideal working radius

**Safety receptacle**

Promotes operator convenience by controlling various internal functions through an external power supply port and featuring a 2-prong outlet.



**Interior folding shelf**

Allows for efficient work in a limited space by enabling simple operations within the booth, thus creating an optimal work environment.

## Add-on configuration of multiple modules

Depending on specific conditions such as the number of medical staff, expected subjects, and installation site area, the system allows for both individual and parallel use of multiple modules, providing flexibility and adaptability.

| Model | | TOGA-TB01F | TOGA-TBR01F |
|---|---|---|---|
| Dimension (W×D×H, mm) | Exterior | 2,360 x 1,000 x 1,000 | 2,360 x 1,000 x 1,000 |
| | Interior | 1,950 x 920 x 920 | 1,950 x 920 x 920 |
| Weight | | 250kg ± | 250kg ± |
| Power consumption | | 91W | 622W |
| Lighting | | O | O |
| Heating/coolling | | - | O |
| Temperature range | | - | 18℃ ~ 32℃ |
| Capacity | | 1person | |
| Pressure control | | Positive pressure | |
| Voltage | | AC110~220V 50/60Hz (Depends on country) | |
| Display type | | 7" LED Screen | |
| Filter (WxDxH, mm) | | HEPA Filter (500 x 500 x 85) | |
| Exterior material | | Steel / Aluminum profile | |
| Window | | Transparent polycarbonate (PC) viewing window | |
| Door | | Transparent polycarbonate (PC) hinged door | |
| Caster | | Fast and precise mobility with 360° swivel casters | |
| Work bench | | 8-inch large-diameter latex glove port, various containers, functional shelf for diagnostic kits | |
| Disposal container | | Automatic lid opening motion sensor | |
| Sterilization trays (WxDxH, mm) | | Stainless (323 x 152 x 174 mm) | |
| Communication | | Intercom (headset &speaker) | |

## Airflow diagram

**Option**

· Color : Customized

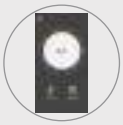
· Print logo

## TOGA® Puri Multi Smart

# Flammable cabinet toxic gas purifier

### Specialized purifier designed to eliminate harmful gases emitted from chemicals stored in flammable cabinets.

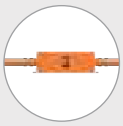
Safely storing flammable chemicals with a high potential for fire and explosion, the patented TOGA® filter effectively purifies toxic gases without any leaks



**4.3" LCD touch screen**

Intuitive GUI design for user convenience

Powder coated with excellent corrosion and chemical resistance



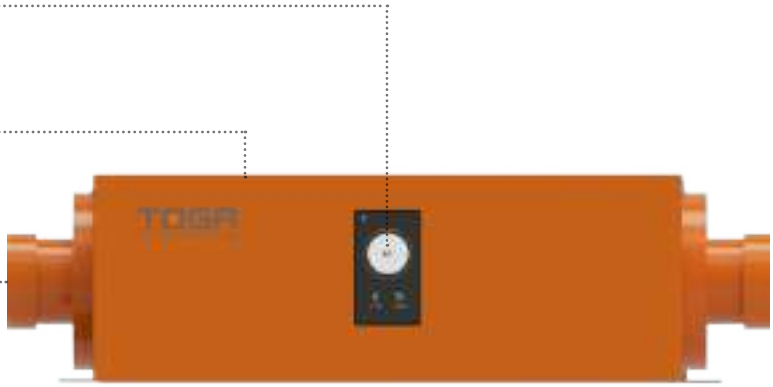
**CPVC**

Using chemically stable pipes to connect to flammable storage cabinets, ensuring safety and integrity of the Storage system.

Features a main body filter compartment separate from electrical components, providing an explosion-proof structure

**IoT Integrated**

Access portal via web or app



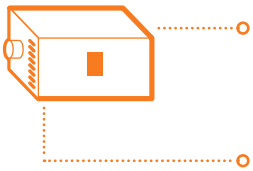


TOGA® Filter



Ductless

## LSPMS Connectivity



**Data**

Temperature record

**SmartLab Mate AI**

Control fan speed remotely

## Example

No emission of toxic gas due to side reactions

Extending the lifespan of the flammable cabinet through the removal of toxic gases

Over temperature alarm

| Cateogry | TOGA® Puri Multi Smart | |
|---|---|---|
| Model | TOGA-SCA0P | TOGA-SCD0P |
| Image |  |  |
| Dimension (W×D×H, mm) | 500x380x175 | 500x380x175 |
| Voltage/frequency | AC220V, 50/60Hz | |
| Material | Main body : SPC 1.6T , Powder coated / chemically stable pipes : CPVC | |
| Controller(display) | On/Off mode | 4.3" LCD touch screen |
| Output | 67W | 77W |
| Weight | 15kg | |
| Pipe | Piping is supplied according to the size of the flammable cabinet | |

## Smart Laboratory Table

# Smart safety free-standing workstation

### A new concept laboratory that maximizes safety prevention and Increases efficiency at the workstation

The Smart safety workstation integrates workstations with sensors, chemical storage cabinets, and toxic gas purifiers, ensuring laboratory environment health and safety.


Experience real-time material information retrieval during NFC tagging, including material safety data sheets (SDS). Register and track the history of each chemical conveniently. Our smart safety laboratory workstation, featuring a standard smart PC, optimizes operational efficiency for laboratory workstation. Customize your setup by choosing a free-standing workstation with chemical storage and/or toxic gas purifier, tailored to your specific application needs.

Eliminate the hassle of document storage and support compliance obligations by recognizing the chemicals in use and accessing Material Safety Data Sheets effortlessly
(Option: SmartLab Mate AI)

Maximize operational efficiency in the laboratory by facilitating real-time sharing of safety-related announcements, manuals, and other relevant information between administrators and users.
(Option: SmartLab Mate AI)

Choose from options such as Workstation with chemical storage cabinets and toxic gas purifier, and easily switch to a SmartLab Mate by replacing the smart PC.
(Option: SmartLab Mate AI)

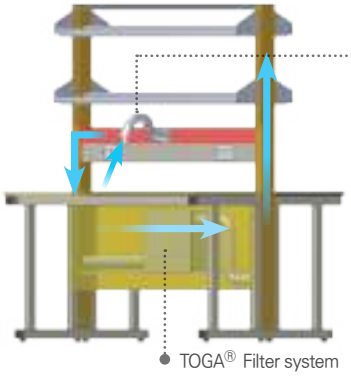

* Automatic recognition function when attaching NFC tags to reagent bottles

## TOGA® Venti Table

# Free-standing workstation with toxic gas purifier

Experience our patented, cutting-edge laboratory furniture that integrates a toxic gas purifier in the workstation. With the TOGA® filter, it efficiently purifies and eliminates toxic gases generated during experiments.

### Toxic gas purification airflow




**Toxic gas purifier**

- Flexible arm with strong suction power
- Remove toxic gases at their source before exposure
- Arm is detachable and can be removed for convenience
- Double or single-sided workstations both available

| Cateogry | Center table | Side table |
|---|---|---|
| Model | GSPC-1000F series (basic type) | GSPS-1000F series (basic type) |
| | GSPC-2000F series (shelf type) | GSPS-2000F series (shelf type) |
| Width | 1050mm / 1200mm / 1500mm / 1800mm | |
| Depth | 1500mm | 750mm |
| Height | 800mm (1800mm with shelf) | |

## TOGA® Safe Table

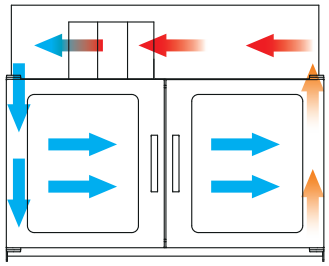
# Free-standing workstation with chemical storage cabinet

Efficiently remove toxic gases within the chemical storage cabinets using the TOGA® filter. Install it on workstation or regular lab benches to maximize space and minimize unnecessary steps.

TOGA® Safe Table, Island or Center Type

TOGA® Safe Table, Mounted or Single-Sided Type

### Toxic gas purification airflow diagram




| TOGA® Safe Table, Island or Center Type | | | | | |
|---|---|---|---|---|---|
| Model | | TOGA-PC1050 | TOGA-PC1200 | TOGA-PC1500 | TOGA-PC1800 |
| Dimension (W x D x H, mm) | Exterior [with filter box] | 947 x 500 x 500 [720] | 1097 x 500 x 500 [720] | 1397 x 500 x 500 [720] | 1697 x 500 x 500 [720] |
| | Interior | 911 x 500 x 464 | 1061 x 500 x 464 | 1361 x 500 x 464 | 1661 x 500 x 464 |
| Capacity | | 211L | 246L | 315L | 385L |

| TOGA® Safe Table, Mounted or Single-Sided Type | | | | | |
|---|---|---|---|---|---|
| Model | | TOGA-PS1050 | TOGA-PS1200 | TOGA-PS1500 | TOGA-PS1800 |
| Dimension (W x D x H, mm) | Exterior [with filter box] | 947 x 310 x 500 [720] | 1097 x 310 x 500 [720] | 1397 x 310 x 500 [720] | 1697 x 310 x 500 [720] |
| | Interior | 911 x 287 x 464 | 1061 x 287 x 464 | 1361 x 287 x 464 | 1661 x 287 x 464 |
| Capacity | | 121L | 141L | 181L | 221L |

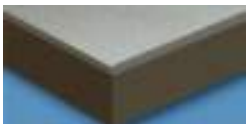
# GT SCIEN Laboratory furniture selection guide

## Work surface material

Customize the lab bench work surface with different characteristics to match the experiment's objectives and environmental conditions.

**Welltop (Basic)**

- Superior chemical resitance
- Good thermal resistance
- Superior scratch resistance
- Double-sided coating



**Wilsonart (modifiable)**

- Superior chemical resitance
- Good thermal resistance
- Outstanding scratch resistance

**Trespa (modifiable)**

- Superior chemical resitance
- Good thermal resistance
- Outstanding scratch resistance

**Ceramite**

- Good chemical resistance and outstanding thermal resistance
- Low scratch resistance

**Epoxy**

- Outstanding chemical resistance and thermal resistance
- Good scratch resistance

## Lab bench types

**Aluminum profile lab benches**

Beautiful aluminum lab bench with robust interior and surface

Materials

**Steel lab benches**

Durable steel benches with powder-coated steel, heat treated, chemical-resistant frame

**Island lab benches**

Double-sided laboratory table designed to optimize space for experimentation and storage.

Location

**Wall-side lab benches**

Single-sided lab benches designed to be placed up against a wall or a window

**Lab bench shelving**

Height-adjustable, detachable shelving may be installed as an option. Tabletop TOGA® filtered chemical storage options also available.

Shelving

**Work surface only lab bench**

Premium, high quality durable lab benches

| Category | Center table | | Side table | |
|---|---|---|---|---|
| | Shelf type | Plane type | Shelf type / Upper cabinet type | Plane type |
| Aluminum Profile |  |  |  |  |
| Steel |  |  |  |  |

| Category | | Center type lab bench | | Side type lab bench | |
|---|---|---|---|---|---|
| | | Storage option | Lab bench only | Storage option | Lab bench only |
| Key features | | • Cabinets and sink options available<br>• Convenient flow of movement and efficient space utilization | | • Cabinet options available<br>• Convenient flow of movement and efficient space utilization | |
| | | • Double-sided<br>• Two-layer TOGA® filtered chemical storage installation available<br>• Fall prevention structure<br>• Convenient lab equipment storage and use | • Wide working space<br>• Large laboratory equipment and apparatuses may be used easily and conveniently | • Two-layer TOGA® filtered chemical storage installation available<br>• Fall prevention structure<br>• Convenient laboratory equipment storage and use | • Optimized for use in small spaces |
| Options | Toxic gas purifier | ○ | ○ | ○ | ○ |
| | Smart lab Integration | ○ | ○ | ○ | ○ |
| | Chemical storage | ○ | - | ○ | - |
| Dimension (W x D x H, mm) | | 2400 x 1500 x 800/1800 | 2400 x 1500 x 800 | 1200 x 750 x 800/1800 | 1200 x 750 x 800 |
| | | 3000 x 1500 x 800/1800 | 3000 x 1500 x 800 | 1500 x 750 x 800/1800 | 1500 x 750 x 800 |
| | | 3600 x 1500 x 800/1800 | 3600 x 1500 x 800 | 1800 x 750 x 800/1800 | 1800 x 750 x 800 |
| | | 4200 x 1500 x 800/1800 | 4200 x 1500 x 800 | 2100 x 750 x 800/1800 | 2100 x 750 x 800 |
| | | - | - | 2400 x 750 x 800/1800 | 2400 x 750 x 800 |
| Basic configuration | | Built in electric outlet(220V) | | | |
| Configuration options | | Drawer/Cabinet/Singel-sided sink/Double-sided sink | | Drawer/ Cabinet / Upper cabinet | |

# Aluminum profile lab bench compared to steel lab bench

## Aluminum profile lab bench key features

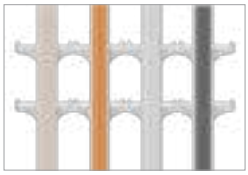
- Anodized treatment that provides better strength, wear and corrosion resistance, and electric insulation
- Aluminum: theoretically 100% recyclable eco-friendly material
- Beautiful design with smooth curves

## Steel lab bench key features

- Steel frame's chemical resistance enhanced through 200°C
- Outstanding strength

Aluminum profile lab bench

Steel lab bench



### Support structure panels

Select from various color options to match desired style or application

### Support structure

Removable panels for easy utility line management. May be used for gas, water and power lines.

### Stainless rod/ Aluminum rod and side supports

- Anti-spill guard and corrosion-proof powder-coated aluminum shelf
- Adjustable height to keep laboratory glassware and chemical bottles of different sizes
- Unique GT SCIEN design

### Work surface

- Various worktop surfaces available according to user preference and application
- Ceramite, epoxy top, phenolic laminate, and chemical-resistant top
- Anti-bacterial surface available as an Option

### Electricals

- Standard: 220V
- Option: 110V or 120V

### LED Lighting (option)

- Installed under the shelf for enhanced convenience and improved visibility

### Mobile base cabines and drawer type

- Portable
- Simple and elegant aluminum handle and profile
- Made of ergonomic 18T P.B LPM for maximum stability and convenience

### Adjustable feet

- height adjustable and levelling

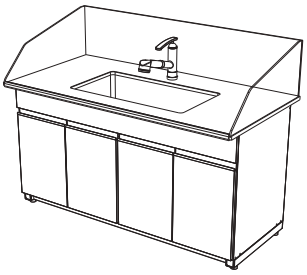
## Island and wall-side workstation

## Laboratory Table Extras

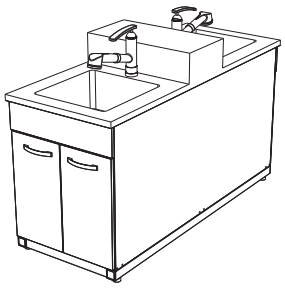
# Lab bench add-ons

GT SCIEN base cabinet sink comes in two models single-sided or double-sided. These options provide easy cleaning of laboratory glassware and apparatus while ensuring researcher convenience

| Category | Model | Dimension (W x D x H, mm) |
|---|---|---|
| Single-sided base cabinet sink | GWP-S1500 | 1500 x 750 x 800/1106 |
| Double-sided base cabinet sink | GWP-S600 | 600 x 1500 x 800/950 |



Single-sided base cabinet sink



Double-sided base cabinet dink

### Sink options

Glassware drying rack

Splash guard

Eye-wash fixture

## Mobile base cabinet drawer type / Mobile base cabinet / Top table

| Category | Model | Dimension (W x D x H,mm) |
|---|---|---|
| Mobile base cabinet drawer type | GWP-D450 | 450 x 540 x 700 |
| Mobile base cabinet | GWP-C450 | 450 x 540 x 700 |
| | GWP-C600 | 600 x 540 x 700 |
| Top table | GWP-F1000 | 1050 x 300 x 345 |
| | GWP-F1200 | 1200 x 300 x 345 |
| | GWP-F1500 | 1500 x 300 x 345 |
| | GWP-F1800 | 1800 x 300 x 345 |

Top table

Mobile base cabinet drawer type

Mobile base cabinet

## Corner lab bench

Optimized structure for the laboratory corner enhances utilization of safe and comfortable research space

| Material | Dimension (W x D x H,mm) |
|---|---|
| Steel/Aluminum | 1000 x 1000 x 800 |

TOGUARD®

# Chemical absorbent powder

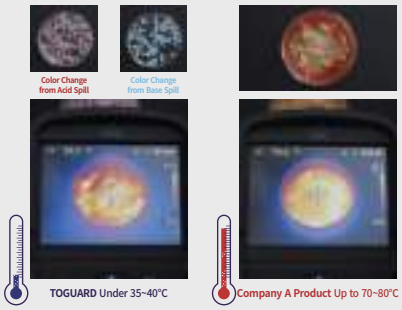
## A mixture that absorbs and provides safe disposal of chemicals

Our fast-absorbing materials significantly reduce reaction time and simplify accident response procedures

18L 500mL 1L 1.8L

- Broad Compatibility: No need to worry about compatibility with specific chemicals
- When time is critical, our innovative rapid-response product helps you contain and neutralize leaks without identifying the spilled substance.
- Ensures safe and effective spill cleanup while minimizing secondary contamination concerns.

〈Thermal comparison test with other products〉



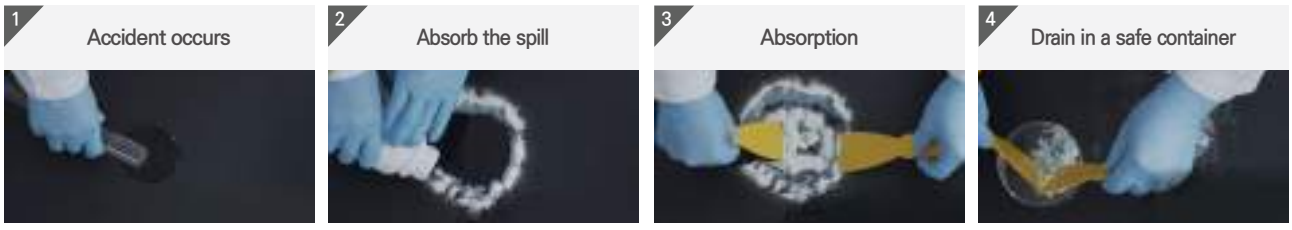

Solvent Type : Hydrochloric Acid(35 ~ 37%)

Initial Temperature: 26℃

Test Findings

- Used 10mL of solvent and observed exothermic reaction was 27-35℃ or lower
- ·Under similar conditions with competing brand , it generated an explosive exothermic reaction of 70-75℃, which increases the risk of burns

## TOGUARD Manual




※ Broad Compatibility: No need to worry about compatibility with specific chemicals

Optional accessory : Chemholder

| Category | Capacity | Comprehensive | Acid/Base absorbent | Fuel&VOC absorbent |
|---|---|---|---|---|
| Chemical absorbent powder | 500mL | TOGUARD-A5 | TOGUARD-AB5 | TOGUARD-O5 |
| | 1L | TOGUARD-A10 | TOGUARD-AB10 | TOGUARD-O10 |
| | 1.8L | TOGUARD-A18 | TOGUARD-AB18 | TOGUARD-O18 |
| | 18L | TOGUARD-A180 | TOGUARD-AB180 | TOGUARD-O180 |

"Specialized acid/alkali and organic products enhance effectiveness in workplaces using only these substances."
"Please consult with our team of experts to confirm specialized products for the chemicals used in each workplace enviroment."

# Highlights of GT SCIEN

**2008**
- GT SCIEN founded and factory opened
- Invented TOGA® filter technology
- Launched toxic gas purifier

**2009**
- Acquired ISO 9001 and 14001 certifications
- Certified as a venture business
- Launched completely closed reagent storage cabinet

**2010 ~ 2011**
- Received green technology certification
- Opened R&D center
- Launched toxic gas-removing reagent refrigerato

**2012 ~ 2013**
- Selected as outstanding global business by daejeon Business agency
- First developed ubiquitous reagent management system
- 2nd generation toxic gas purifier released

**2014**
- Received INNO-BIZ Certification
- Launched Ventilated Laboratory Table
- Launched Ducted Fume Hood

**2015**
- Developed IoT Reagent Safety Prevention Management System(RSPMS)
- Launched Completely Closed IoT Reagent Storage Cabinets
- Launched Intelligent Toxic Gas Purifier
- Launched Intelligent Ductless Fume Hood

**2016**
- Selected as a Green Company by Ministryof Environment
- IoT Reagent Safety Prevention Management System receives Good Software Certification
- Launched IoT Reagent Refrigerator for removing toxic gasess

**2017**
- Selected As Outstanding Business by Ministry of Environment
- Developed IoT Laboratory Safety Prevention Management System(LSPMS)
- Launched Aluminum ProfileLaboratory Table&Fume Hood Line
- Won Pin Up Design Award for Laboratory Tables Fume Hoods
- Won Good Design Award for Toxic Gas Purifiers

**2018**
- Established Japan branch office inTsukuba
- Acquired K Mark and Q Mark for the Intelligent Laboratory Table System
- Received Pin Up Design Awardfor the Intelligent Laboratory Table System
- IoT Laboratory Safety Prevention Management System (LSPMS) Receives Good Software Certification

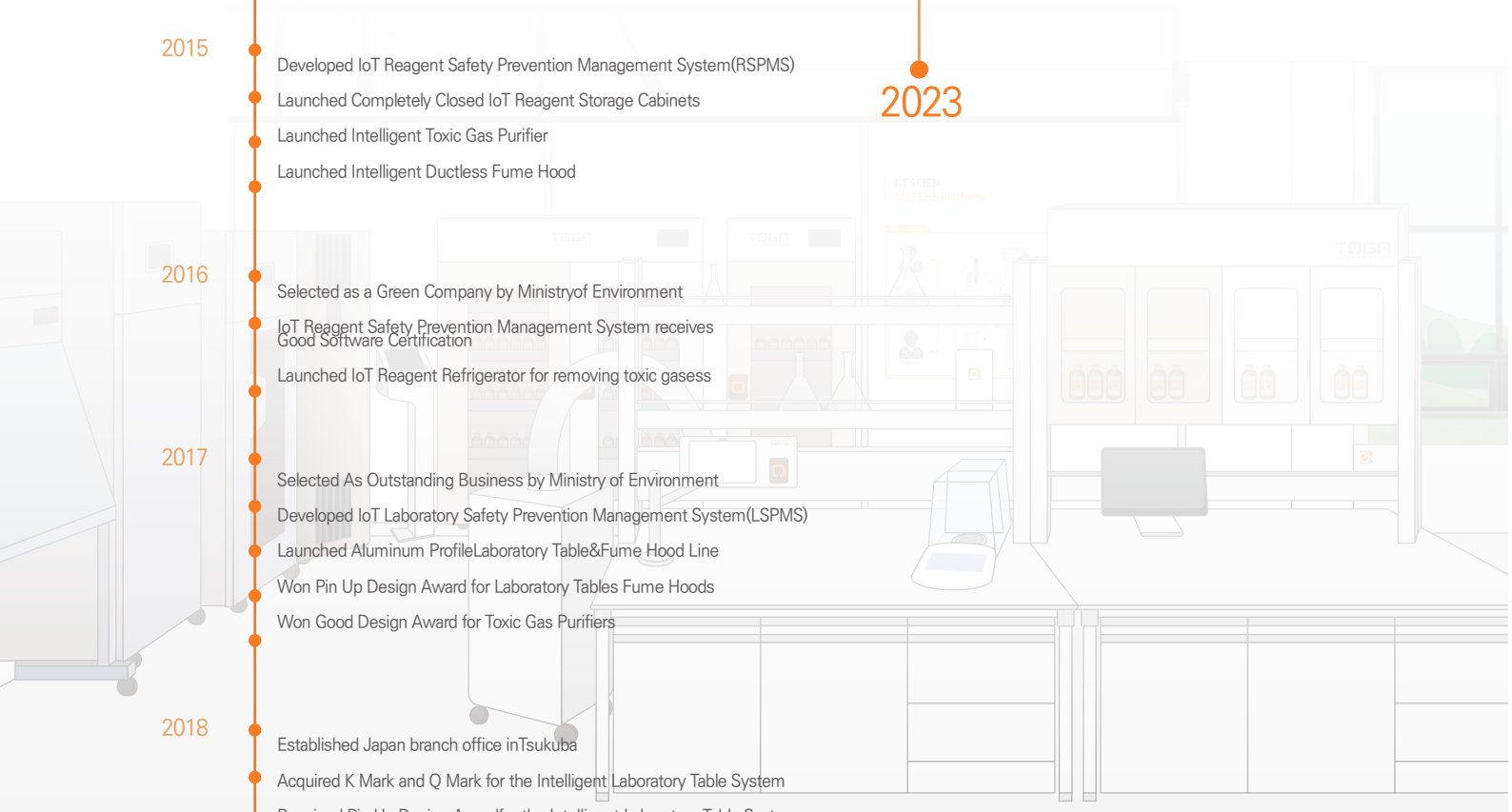
**2019**
- Selected As Outstanding Business by Ministry of Environment
- Launched Aluminum Profile Laboratory Table & FumeHoodLine
- Won Pin Up Design Award for Laboratory Tables Fume Hoods
- Won Good Design Award for Toxic Gas Purifiers

**2020**
- Selected as apromising small business in Daejeon
- Selected as Star Enterprise in Daejeon
- Selected as Global intellectual Property(IP) Star Firm
- Launched Smart testing booth-Covid19
- Launched IoT vaccine refrigirator-Covid19
- Won Good Desing Award for Refrigerated reagent cabinet,
- Smart testing booth

**2021**
- Launched AIoT EHS Platform
- Launched AIoT Completely Enclosed Chemical Storage Cabinet

**2022**
- Launched SmartLab Mate AI, SmartLab Sensor AI
- Launched IoT 3D Printer Toxic Gas Purifier
- Launched IoT Hazardous Storage Toxic Gas Purifier

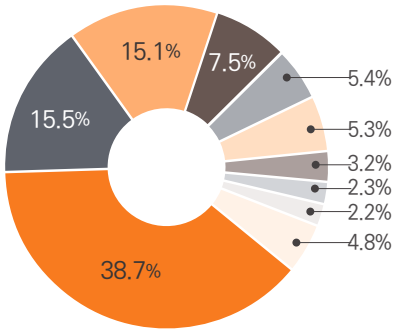
**2023**



# Key Customers

## Customer Distribution by Field

- Biology / Chemistry / Environment
- Medicine / Pharmaceutical / Nursing
- Food
- Electricity / Electronics
- Ingredients / Materials
- Agriculture & Forestry / Fisheries
- Chemical engineerin
- Machinery / Metals
- Apparel
- Others




## Business / Private Sector

## Government / Public Sector

## College / Education

## Research Institutes

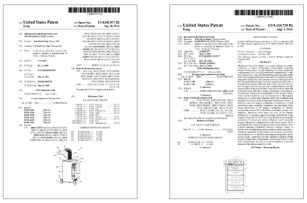
# Patent / Certification / Awards

## Patents in Korea

- Nove titanium dioxide-type photocatalysts and its preparation method
- Storage refrigerator for chemical reagents
- Air-tight circulation-type storage cabinet for chemical reagents
- Smart-type lab table
- Intelligent integration control device of chemical storage cabinet
- Device and method for storehouse control and storage control of loading, unloading using remote control monitoring
- Purifying and neutralizing apparatus for hazardous gas
- Pretreatment apparatus
- Hybrid filter and manufacturing method thereof
- Lab table with ventilating-type enclosed chemical reagent shelves
- Ventilation-type lab table
- Activated carbon filter module and purifying and neutralizing apparatus for hazardous gas with the module
- Activated carbon filter module, purifying and neutralizing apparatus for hazardous gas

## Foreign Patents

### USA



- Apparatus for purifying and neutralizaing toxic gases
- Storage refrigerator for chemical reagents

### CHINA

- Purifying and neutralizing apparatus for hazardous gas
- Storage refrigerator for chemical reagents

### INDIA

- Storage Refrigerator for Chemical Reagents

## CE (Conformité Européenne)

- TOGA-M01D & S02D
- TOGA-IGS01/02, TOGA-GS01/02
- TOGA-IGSR01, TOGA-GSR01
- TOGA-IGSR11P/12P, TOGA-GSR11P/12P
- TOGA-DFH900/1200

## GS (Good Software)

- IoT reagent safety prevention management system v1.0 for linux
- LSPMS-web system v1.0

## ISO (9001, 14001)

- Quality management systems
- Environmental management systems

## Awards

- Selected as one of the 10 finalists of UN Citypreneurs Seoul 2019
- Selected as one of the 10 finalists of the KAIST-UT AUSTIN global up program
- Smart safety laboratory table selected as an excellent product by the public procurement service in 2019




## Design Awards

PIN UP DESIGN AWARDS 2019

Award-winning product

PINUP DESIGN AWARD 2019 – BEST100

- Completely Closed IoT Reagent Storage / Completely Closed Reagent Storage (General-Type)
- Completely Closed IoT Refrigerated Reagent Storage / Completely Closed Refrigerated Reagent Storage (General-Type)

PIN UP DESIGN AWARDS 2018

Award-winning product

PINUP DESIGN AWARD 2018

– FINALIST Smart Safety Laboratory Table

PIN UP DESIGN AWARDS 2017


Award-winning product

- Pin up design award 2017 – Finalist Portable Toxic Gas Purifier
- Pin up design award 2017 – Best of the Best Aluminum Profile Fume Hood

GOOD DESIGN AWARD® WINNER

GOOD DESIGN KOREA

Award-winning product

- 2019 : Completely Closed IoT Reagent Storage
- 2017 : Portable Toxic Gas Purifier
- 2020 : Completely Closed Reagent Refrigerator