



# **Leading Global Provider of LAB EHS Solutions**

## Our Company

### A Global provider in Lab EHS Solutions

We provide integrated laboratory EHS solutions based on our toxic gas purification technology and IoT management platform to transform laboratories into environmentally-friendly, safe and healthy work environments for researchers.

## The TOGA Brand



### TOGA® : Toxic Gas Clean Air System

Laboratory researchers, factory workers and other professions that work with chemicals are exposed to toxic gases. The TOGA® Clean System removes and purifies toxic gases and foul-smelling odors, ensuring that those working with toxic chemicals can do so safely, while enjoying a pleasant work environment.

## Our Mission

# LAB | EHS | 4.0

#### We are laboratory experts

We have experience working with every kind of lab, in every major industry. No matter the application, we always solve our client's problems.

#### EHS is non-negotiable

EHS is always at the core of our business and our product development. Researcher health and safety, and environmental protection are our top priorities

#### We improve safety by adopting advanced technologies

We are evolving a company to become an integrated lab safety solution provider by utilizing Industry 4.0 technologies such as IoT and AI.



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# What Is Lab EHS and Why Do We Need It?

## EHS

Environment, Health, Safety

Environment, Health and Safety is a field that implements safety and environmental policies at work. The scope of EHS includes procedures for identifying and controlling safety hazards as well as accident prevention, and seeks to reduce overall risk to people by developing safe and environmentally friendly work practices.

## The Importance of Lab EHS

Laboratories are dangerous environments and researchers, the vanguard of scientific and technological development, are at high risk of accidents and exposure to harmful chemical substances. Implementing integrated EHS management systems protect researchers, ensure their long-term safety, and guarantee a pleasant, environmentally-friendly work environment. Implementing these systems can also boost operational efficiency and reduce safety violations.

### Lab EHS Management



Exposure to dangerous, toxic chemicals and gases



Difficult to identify risk and predict outcomes



Accidents mostly resulting from human error or negligence



Complaints from neighboring facilities and local communities

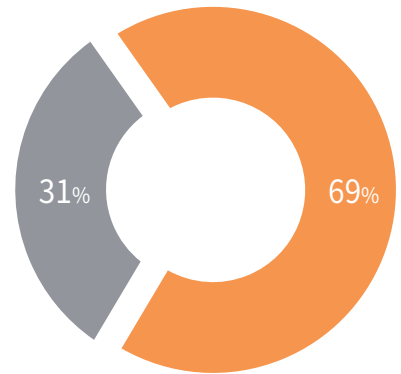
### Major Laboratory Risk Factors



Chemical Hazard



Human Error



Legend: Chemical Hazard (Grey), Human Error (Orange)

Source: A Study on the Analysis and Management of Types of Laboratory Accidents (2018)

Ignore

## Long-term Downside Risk of Laboratory Accidents



Brain drain as employees move to other safer fields



Economic loss due to poor performance and regulatory penalties



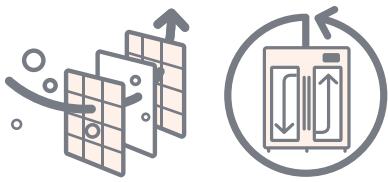
Reduced out put as researchers are unable to provide results in dangerous environments



Social loss and loss of human life caused by laboratory accidents and chronic diseases caused by long-term exposure to harmful chemicals

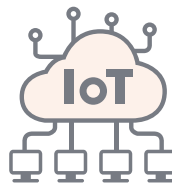
## Our Solutions

Lab EHS is a comprehensive issue requiring integrated, preemptive solutions that fully take into account and consider the unique aspects and characteristics of the laboratory environment in order to effectively minimize accidents, ensure the health and safety of lab researchers and minimize potential socioeconomic losses, thereby establishing a sustainable R&D environment.



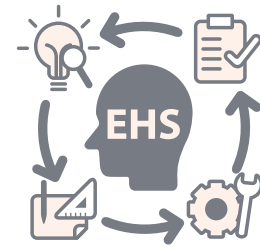
### TOGA® CLEAN SYSTEM

Eliminate toxic gases from the laboratory environment. Keep researchers safe, protect the environment and reduce energy consumption.



### IoT EHS Platform

Prevent accidents and boost operation efficiency

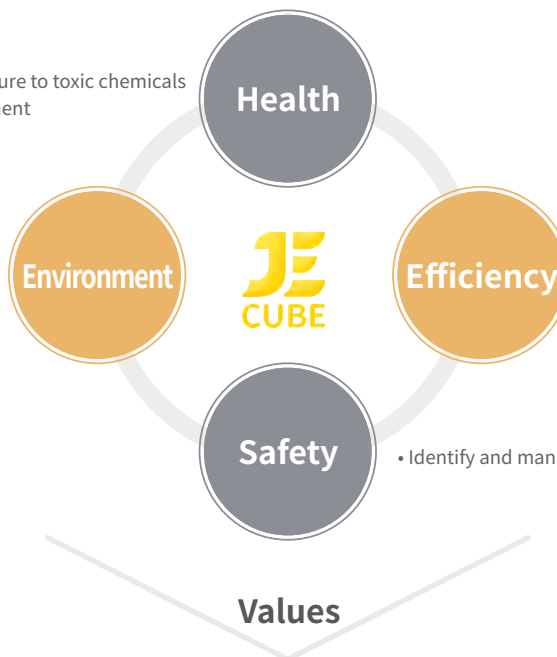


### Lab EHS Total Solution

One-stop lab EHS consulting, design, and customized solutions

- Prevent diseases caused by exposure to toxic chemicals
- Provide a pleasant work environment

- Prevent environmental pollution
- Reduce energy costs



- Promote communication
- Quick and easy installation, convenient portability

- Identify and manage risk factors in real time

## Benefits of a Lab EHS-based Approach



Provide a safe and healthy working environment



Boost user productivity and sustainability



Fulfill our social responsibility and promote environmental conservation

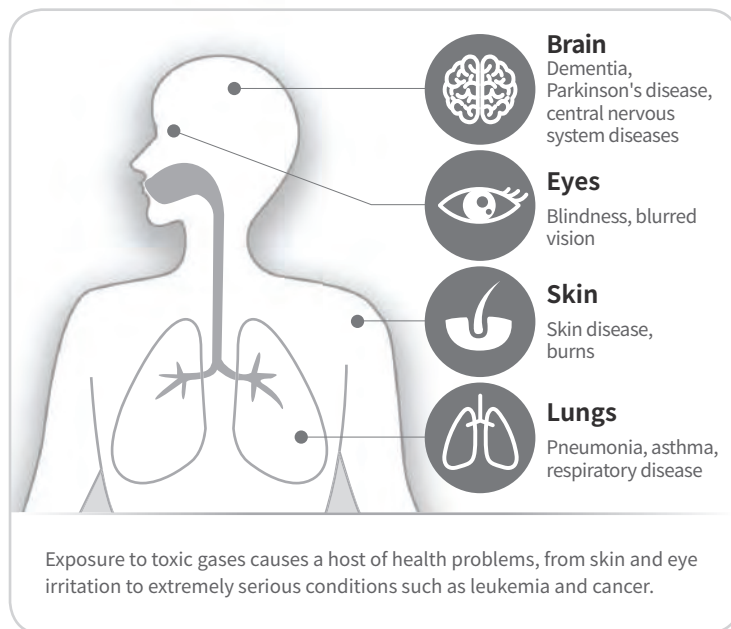
# The Dangers of Laboratory Chemicals

Most common chemicals used in the lab are toxic and exposure can cause serious harm. Volatile chemicals, which produce gaseous vapors at room temperature, need to properly stored and managed as these vapors can cause harm even when they are not being used in laboratory experimentation.



## When You Handle Chemicals, Remember :

- Always check MSDS when handling chemicals.
- Be well-informed of what to do when exposed to harmful chemicals.
- Wear protective equipment whenever you handle chemical substances.



## Diseases Resulting from Chemical Exposure

Long-term exposure to chemicals may cause bodily harm and disease. The below list shows some of the most common chemicals used in laboratories and the effects exposure to these chemicals has on the human body.

Substance	Chemical formula	TLV-TWA	TLV-STEL	Diseases Caused by Exposure
Chloroform (Trichloromethane)	CHCl <sub>3</sub>	10 ppm	-	Skin disease, toxic hepatitis
Benzene	C <sub>6</sub> H <sub>6</sub>	0.5 ppm	2.5 ppm	Anemia, leukemia
Trichloroethylene	CCl <sub>2</sub> CHCl	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/m <sup>3</sup>	-	Anemia, peripheral neuritis, nephritis
Nickel (soluble compounds)	Ni	100 µg/m <sup>3</sup>	-	Dermatitis, lung cancer, paranasal sinus, & nasal cavity cancer
Cadmium	Cd/CdO	10 µg/m <sup>3</sup>	-	Kidney disease, lung cancer
Chromium (IV) compounds (water-soluble)	Cr	50 µg/m <sup>3</sup>	-	Dermatitis, respiratory system damage, lung cancer
Sulfuric acid	H <sub>2</sub> SO <sub>4</sub>	200 µg/m <sup>3</sup>	-	Chronic bronchitis, laryngeal cancer
Ethylene oxide (EO gas)	(CH <sub>2</sub> ) <sub>2</sub> O	1 ppm	5 ppm	Leukemia, cataracts
Dimethylformamide (DMF)	HCON(CH <sub>3</sub> ) <sub>2</sub>	10 ppm	-	Dermatitis, toxic hepatitis
Ozone	O <sub>3</sub>	0.05 ppm	-	Pulmonary edema, respiratory system damage
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	1 ppm	-	Pulmonary edema, emphysema

▶ 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 Safe Reagent Storage

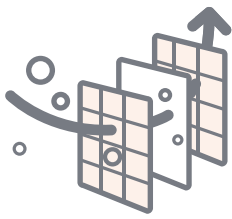
The safe storage of hazardous chemicals is a major component of proper lab EHS management. To be considered safe, standards set by OSHA in the United States and EHSA in Europe, as well as those set by other major and local regulatory bodies must be met. Chemicals must be properly labeled and segregated according to their hazard class. Accidental exposure between incompatible chemicals can cause fire, explosion and other dangerous reactions, which can cause accidents and bodily harm.



### Categorizing Chemical Substances by Hazard Class

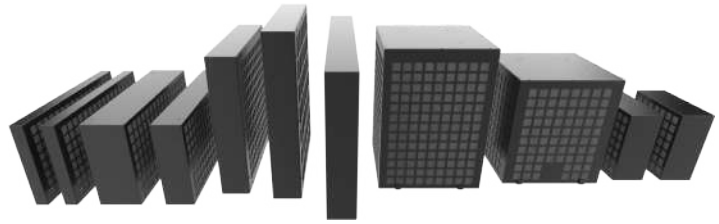
Categorization by property	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Properties	Oxidizing solid	Flammable solid	Water-reactive chemicals and Pyrophoric substances	Combustible liquids	Self-reactive substances	Oxidizing liquids
Group 1	-	X	X	X	X	O
Group 2	X	-	X	O	O	X
Group 3	X	X	-	O	X	X
Group 4	X	O	O	-	O	X
Group 5	X	O	X	O	-	X
Group 6	O	X	X	X	X	-

# SOLUTION 1 : TOGA® CLEAN SYSTEM



## TOGA® Filter Technology

- Patent in the US : US 8, 845, 971, B2
- Patent in ROK : No. 10-0941666
- Patent in China : No. 1345867



## The Best Filter for Removing Toxic Gases

TOGA® filters use laboratory-optimized Triple Action Technology™ that combines physical adsorption with chemical and neutralization reactions to eliminate virtually all toxic gases.



VS



- Removes toxic gases and odors through physical adsorption.
- Removes toxic gases through chemical reactions
- Removes toxic gases through neutralization

**Toxic Gas Removal**  
Removes over 99% of various toxic gases from the laboratory

**Longer Filter Life**  
Works at high efficiency longer, with less frequent filter replacements required

**Minimize Filter Breakthrough**  
Minimize risk of contamination from filter saturation

**No harmful byproducts**  
No ozone or harmful substances are created as byproducts

## Filter Selection Guide

**A type**  
VOCs, alcohol, hydrocarbon, odors

**B type**  
Organic compounds, O<sub>3</sub>, NH<sub>3</sub>

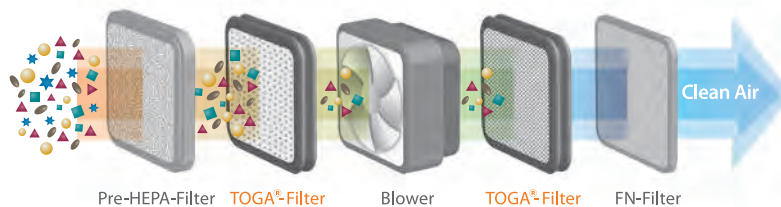
**C type**  
Acid, bases, NO<sub>x</sub>, SO<sub>x</sub>

**STANDARD type**  
Combination of A, B and C types for general laboratory use

**SPECIAL type**  
Customized filter solutions designed for unique chemical applications

## TOGA® Clean System: How it Works

- ★ Dusts
- VOC's, O<sub>3</sub>
- HF
- ▲ SO<sub>x</sub>, NO<sub>x</sub>
- NH<sub>3</sub>, HCl



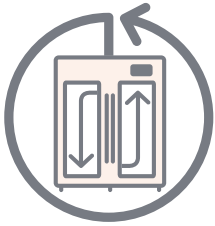
Toxic gases **1** → **2** → **3** → **4** Purified air

**Step 1 (Pre-HEPA-filter)**  
Removes fine dust particles, extending filter life

**Step 2 (TOGA® filter)**  
Removes toxic gases, VOCs, odors, fumes, etc.

**Step 3 (TOGA® filter)**  
Boosts chemical removal efficiency, ensures safety by minimizing breakthrough

**Step 4 (FN filter)**  
Removes the small amount of CO<sub>2</sub> generated while toxic gases are purified by the filter



## Ductless Structure Design

Reinforces JE CUBE's core EHS mission by saving energy and protecting laboratory researchers from accidental exposure to fumes from stored chemicals

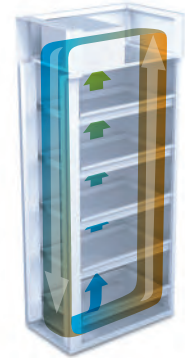
## Closed Air Circulation in TOGA Products

- Prevents toxic gases generated by volatile chemicals from being released into the laboratory environment
- Extends filter life as the filter does not have to continuously purify external air flowing into the system



### Average Filtered Storage Cabinets

Air is continually cycled through the filter and released into external lab environment.



### TOGA® Filtered Storage Cabinets

Internal air is purified and recirculated ensuring safety and extending filter life

## Benefits of Ductless Structural Design



No pollutants are released into the outside environment



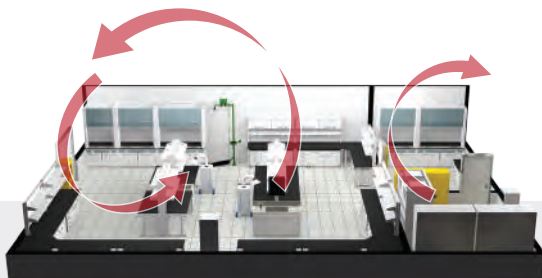
Prevents energy loss, making it cheaper and easier to maintain laboratory temperature/humidity levels



Easy to move and no need to connect to ductwork or HVAC system

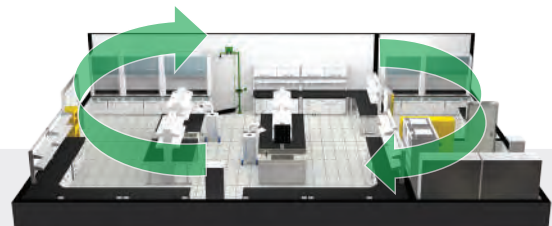
## Minimize Exposure to Toxic Chemicals

- Incorporate ductless structural design principles and toxic gas filtration technologies
- Reduce the energy costs required to maintain constant temperature and humidity conditions and minimize toxic gas being exhausted into external environment



### Average Laboratory Environment

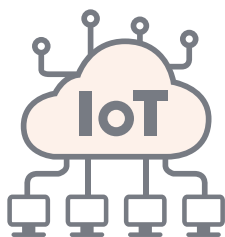
Air must be ventilated outside the laboratory via ductwork and HVAC system



### Laboratory Environment Incorporating TOGA Ductless Structural Design

Minimize dependence on ductwork, reduce costs and provide a pleasant work environment while keeping researchers safe and healthy

## SOLUTION 2 : IoT EHS Platform



### Reagent Safety Prevention Management System (RSPMS)

Our IoT reagent management platform boosts reagent management efficiency and prevent human errors from occurring while handling potentially dangerous chemicals.



#### Safe Chemical Storage

- Automatic classification by hazard class
- Keep track of expiration dates
- Monitor reagent usage in real-time



#### Integrated Reagent Management

- Database of over 20,000 reagents
- RFID technology to log reagent usage
- Reduce costs, boost efficiency



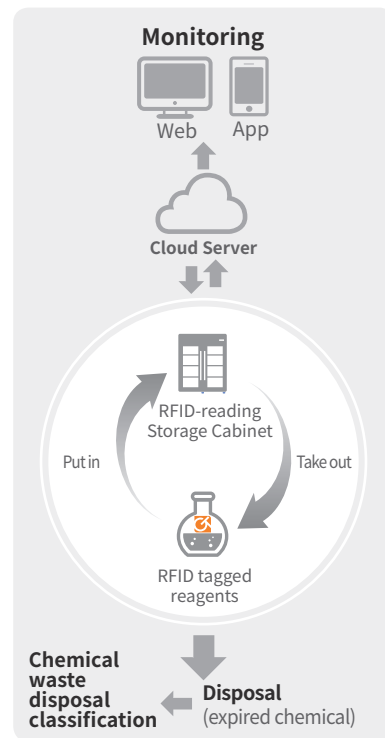
#### User Management

- Control user access to dangerous chemicals
- Independent system management by organization / team



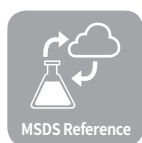
#### User-centered Interface

- Remote monitoring via web and mobile applications
- Push notifications for reagent and reagent storage conditions



## Laboratory Safety Prevention Management System (LSPMS)

Integrated laboratory management solution providing a variety of safety and convenience features required for managing a safe lab environment, and complying with legal regulations related to laboratory safety and environment.



#### Digital MSDS

- Instant digital MSDS look-up
- Full RSPMS integration



#### Lab Air Quality Monitoring

- Monitor toxic gases and air quality in real time
- Push notification sent if contaminants exceed safe levels



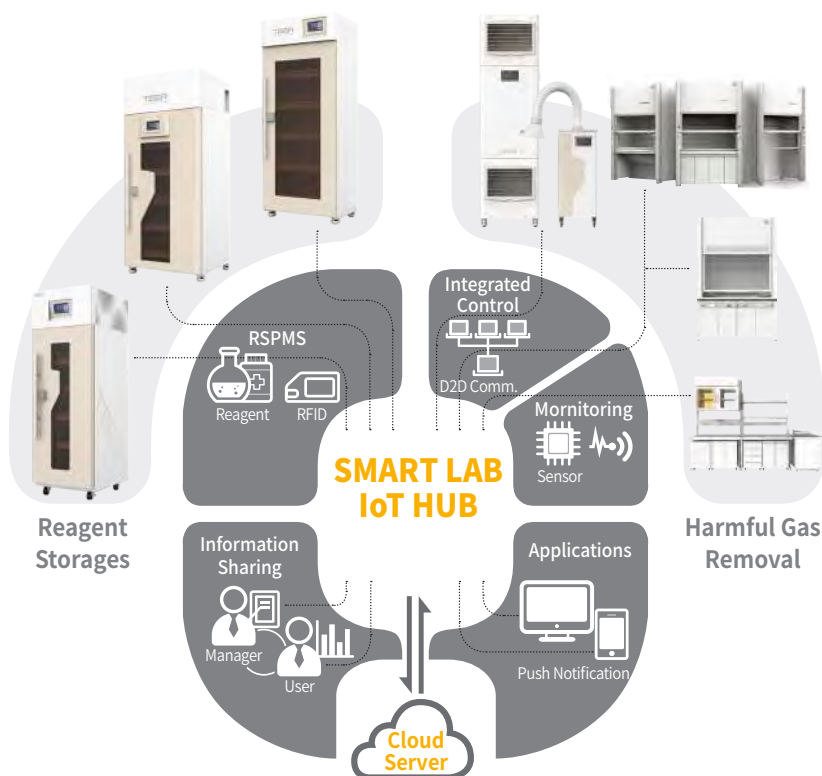
#### Experiment information sharing platform

- Data sharing between users, including safety regulations, notices, and experimental notes



#### User-centered interface

- User-friendly mobile and web applications

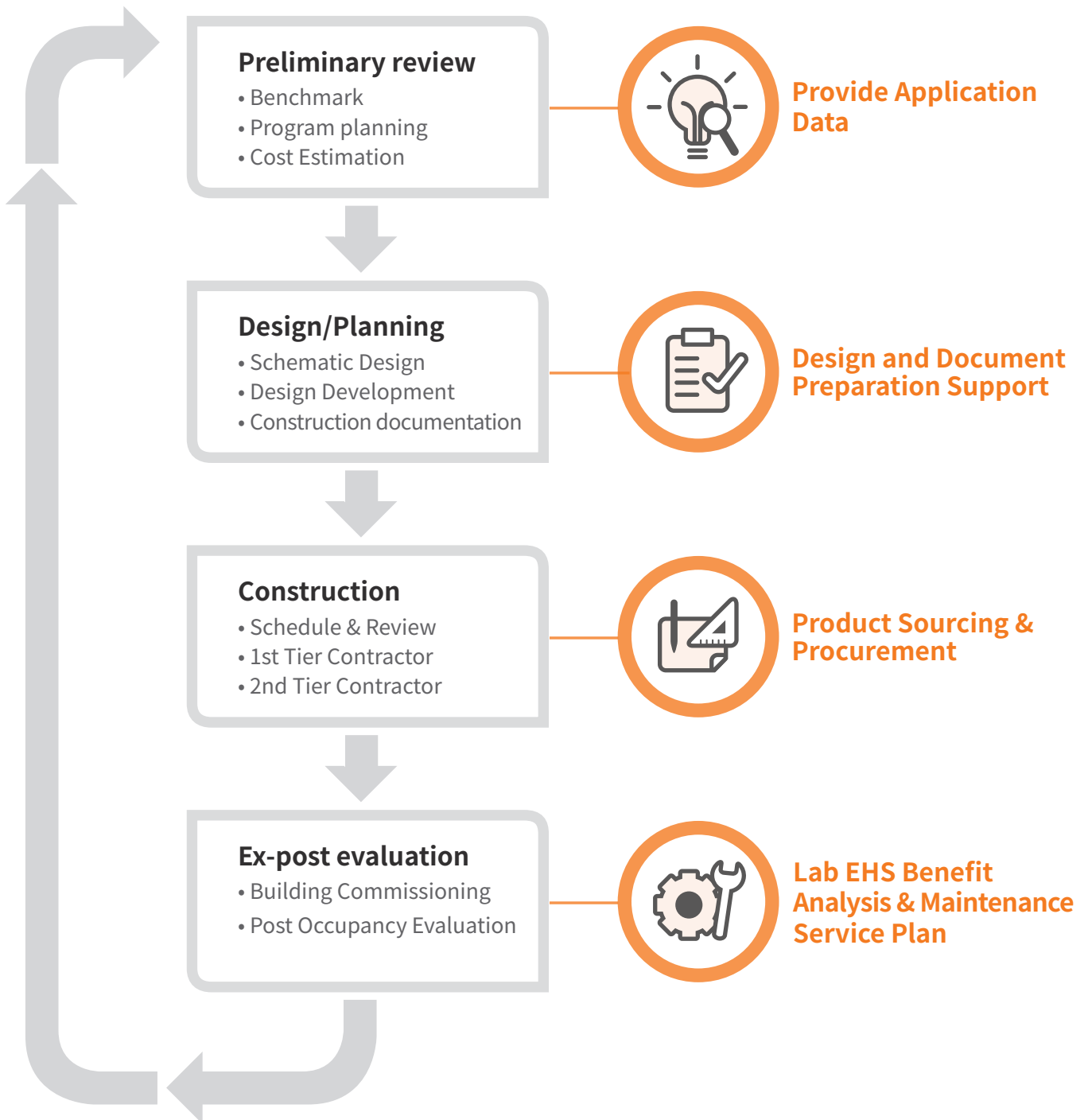


# SOLUTION 3 : Lab EHS Total Solution











## Turnkey Solutions for Lab Construction/Renovation

Our laboratory construction experts provide consulting and customized solutions to transform your laboratory into an EHS-optimized workspace, ensuring full compliance with all safety regulations and guaranteeing a safe, pleasant work environment for laboratory researchers.



# PRODUCT Line-up



## ● Reagent Storage Cabinets

 <p>Completely Closed IoT Reagent Storage Cabinet (Double-Door)</p>	 <p>Completely Closed IoT Reagent Storage Cabinet (Single-Door)</p>	 <p>Completely Closed Reagent Storage Cabinet (Double-Door)</p>	 <p>Completely Closed Reagent Storage Cabinet (Single-Door)</p>
 <p>Exhaust-Type IoT Reagent Storage Cabinet (Double-Door)</p>	 <p>Exhaust-Type IoT Reagent Storage Cabinet (Single-Door)</p>	 <p>Exhaust-Type Reagent Storage Cabinet (Double-Door)</p>	 <p>Exhaust-Type Reagent Storage Cabinet (Single-Door)</p>


## ● Reagent Refrigerators

 <p><b>Premium</b> Completely Closed IoT Reagent Refrigerator</p>	 <p><b>Premium</b> Completely Closed Reagent Refrigerator</p>
 <p>Completely Closed IoT Reagent Refrigerator (Double-Door)</p>	 <p>Completely Closed IoT Reagent Refrigerator (Single-Door)</p>
 <p>Completely Closed Reagent Refrigerator (Double-Door)</p>	 <p>Completely Closed Reagent Refrigerator (Single-Door)</p>

## ● Intelligent Toxic Gas Purifiers

 <p>Standing Toxic Gas Purifier</p>	 <p>Portable Toxic Gas Purifier</p>
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## ● Ductless Fume Hoods

 <p>Intelligent Ductless Fume Hood</p>
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## ● Chemical Absorbent and Neutralizer Agent

 <p>TOGUARD</p>
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## ● Customized Equipment

 <p>Osmium Gas Purification System (All-in-One)</p>	 <p>Osmium Gas Purification System (Half-Type)</p>
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## ● Fume Hood



Aluminum All-in-One



Aluminum Upper Type



Aluminum Walk-In



Aluminum Tabletop



Steel Fume Hood

## ● Laboratory Furniture



Intelligent Laboratory Table System



Tabletop Reagent Storage



Ventilated Laboratory Table with Shelf



Ventilated Laboratory Table



Center Type Laboratory Table with Shelf



Center Type Laboratory Table



Wall Laboratory Table with Shelf



Wall Plane Laboratory Table



Laboratory Sink Table



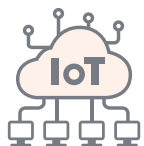
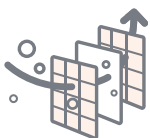
Drawer



Cabinet



Corner Laboratory Table



※ Specifications are subject to change at any time without prior notice.

## TOGA® Safe Smart

# Completely Closed IoT Reagent Storage

### Safely store and efficiently manage reagents with smart IoT technology

Equipped with TOGA® filter technology to remove toxic gases generated from reagents stored inside the cabinet. Completely closed structural design ensures toxic fumes and noxious odors stay inside the cabinet to be purified by the TOGA® filters. External contaminants, such as dust, cannot enter the cabinet, extending filter life. IoT system manages and monitors reagent use in real time. The complete filtered storage solution for your laboratory.



TOGA® Safe Smart (Double-Door)



TOGA® Safe Smart (Single-Door)





[Filter Technology]



[Smart Technology]



Features	Schematic Diagram of Patented Structure
<ul style="list-style-type: none"> <li>① IoT 7" touchpad</li> </ul>  <ul style="list-style-type: none"> <li>② UV-tinted polycarbonate window</li> <li>③ Long, easy-to-grab handles</li> <li>④ Safety bars to prevent reagent spillage and height-adjustable shelves</li> <li>⑤ Portable caster wheels</li> </ul>	 <ul style="list-style-type: none"> <li>① TOGA® Filter System</li> <li>② Completely sealed structural design and self-contained airflow</li> </ul>

## TOGA® Safe

# Completely Closed Reagent Storage

### Safely store reagents

Equipped with TOGA® filter technology to remove toxic gases generated from reagents stored inside the cabinet. Completely closed structural design guarantees that toxic fumes and noxious odors do not leave the cabinet and extends filter life.



TOGA® Safe Smart (Double-Door)

TOGA® Safe Smart(Single-Door)



Category		TOGA® Safe Smart		TOGA® Safe	
Product image					
Model		TOGA-UGS01(Single-Door)	TOGA-UGS02 (Double-Door)	TOGA-GS21 (Single-Door)	TOGA-GS22 (Double-Door)
Size (W x D x H, mm)	Exterior	800 x 540 x 1950	1600 x 540 x 1950	800 x 540 x 1950	1600 x 540 x 1950
	Interior	690 x 500 x 1580	1480 x 500 x 1580	690 x 500 x 1580	1480 x 500 x 1580
Capacity		1L/ 120 bottles	1L/ 260 bottles	1L/ 120 bottles	1L/ 260 bottles
Control unit (Display unit)		7" touchpad LCD display platform		LED display	
Reagent Management System		Available		-	
Filter Replacement Period (recommended)		1 year (Filter change intervals vary depending on the types, quantity, and concentration of reagents.)			
Noise		< 50dB			
Voltage, Frequency		AC 220V, 50/60Hz			
Power consumption		20W	50W	20W	47W
Weight		150kg	250kg	150kg	250kg
No. of shelves		5	10	5	10

## Exhaust type reagent Storage

# Exhaust-Type IoT Reagent Storage / Exhaust-Type Reagent Storage

Safely expel toxic fumes via ductwork and efficiently manage toxic chemicals with IoT technology.

Toxic gases and fumes generated from stored reagents are safely ventilated through ductwork. IoT system manages and monitors reagent use in real-time. The complete ventilated reagent storage solution for your laboratory.



Exhaust-Type IoT Reagent Storage

Exhaust-Type Reagent Storage

### Features

① IoT 7" touchpad



- ② UV-tinted polycarbonate window
- ③ Long, easy-to-grab handles
- ④ Safety bars to prevent reagent spillage and height-adjustable shelves
- ⑤ Portable caster wheels



### Optional

Can be converted to filtered, completely closed storage cabinet with addition of TOGA® Filter.



※ Same as Completely Closed Double-Door Reagent Storage

[Smart Technology]



Category		Exhaust-Type IoT Reagent Storage		Exhaust-Type Reagent Storage	
Product image					
Model		TOGA-UGSD01 (Single-Door)	TOGA-UGSD02 (Double-Door)	TOGA-GSD01 (Single-Door)	TOGA-GSD02 (Double-Door)
Size (W x D x H, mm)	Exterior	800 x 540 x 1950	1600 x 540 x 1950	800 x 540 x 1950	1600 x 540 x 1950
	Interior	690 x 500 x 1580	1480 x 500 x 1580	690 x 500 x 1580	1480 x 500 x 1580
Capacity		1L/ 120 bottles	1L/ 260 bottles	1L/ 120 bottles	1L/ 260 bottles
Control unit (Display unit)		7" touchpad LCD display platform		LED display	
Reagent Management System		Available		-	
Noise		< 50dB			
Voltage, Frequency		100~240V, 50/60Hz			
Power consumption		20W	50W	35W	35W
Weight		135kg	230kg	135kg	230kg
No. of shelves		5	10	5	10

# TOGA® Fridge Smart Premium / TOGA® Fridge Premium

## Premium Completely Closed IoT Reagent Refrigerator

Safely store and efficiently manage refrigerated reagents with patented refrigeration technology and smart IoT technology

Patented refrigeration technology enables superior temperature control, and guarantees a uniform temperature is maintained on each shelf and throughout the entire refrigerator. Equipped with TOGA® filter technology to remove toxic gases generated from reagents stored inside the refrigerator. IoT system manages and monitors reagent usage in real-time. The complete premium laboratory refrigerator solution for your laboratory.



TOGA® Fridge Smart (PREMIUM)

TOGA® Fridge (PREMIUM)

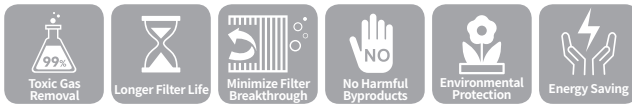
### 제품의 부분별 특징

① IoT 7" touchpad



- ② Dual-tempered glass and hot wire pair glass prevents condensation
- ③ Long, easy-to-grab handles
- ④ Safety bars to prevent reagent spillage and height-adjustable shelves
- ⑤ Portable caster wheels

### [Filter Technology]



### [Smart Technology]



Category	TOGA® Fridge Smart Premium	TOGA® Fridge Premium	Schematic diagram of toxic gas removal and cool air flow
Product image			<div style="border: 1px solid gray; padding: 5px;"> <p><b>Patent Reagent Refrigeration Technology</b></p> <ul style="list-style-type: none"> <li>Cooled air circulates smoothly and quickly.</li> <li>Toxic gases are purified and the air is recirculated.</li> </ul> </div> <p>① TOGA® Filter System</p> <p>② Completely closed / Internal circulation structure</p>
Model	TOGA-UGSR01	TOGA-GSR01	
Size (W x D x H, mm)	Exterior: 880 x 795 x 2070 Interior: 660 x 560 x 1450		
Capacity	536L		
Temperature distribution	±1°C		
Temperature control range	2 ~ 10°C		
Refrigeration system	Refrigerant used	R-134a	
	Compressor	1/3 HP	
	Condenser	1/2 HP	
	Evaporator	1/2 HP	
Defrosting	Automatic defrosting		
Control unit (Display unit)	7" touchpad LCD display platform	LED display	
Reagent Management System	Available	-	
Voltage, Frequency	100~240V, 50/60Hz		
Power consumption	1.1 kW	800W	
Filter Replacement Period (recommended)	1 year (Filter change intervals vary depending on the types, quantity, and concentration of reagents.)		
Frame	White foam		
No. of shelves	5	5	
Weight	300kg	300kg	

## TOGA® Fridge Smart

# Completely Closed IoT Reagent Refrigerator

Safely store and manage refrigerated reagents with smart IoT technology.

Innovative engineering maintains constant temperature in each compartment. Equipped with TOGA® filter technology to completely remove toxic gases generated by reagents stored inside the refrigerator. IoT system manages and monitors reagent usage in real-time. The total affordable total laboratory refrigerator solution.



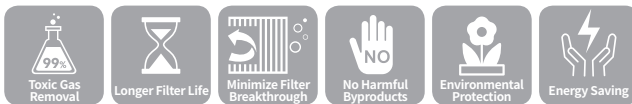
TOGA® Fridge Smart (Double-Door)



TOGA® Fridge Smart (Single-Door)



[Filter Technology]



[Smart Technology]



Features	Toxic Gas Removal and Dynamic Air Flow
<p>1 IoT 7" touchpad</p>  <p>2 Dual-tempered glass and hot wire pair glass prevents condensation</p> <p>3 Long, easy-to-grab handles</p> <p>4 Safety bars to prevent reagent spillage and height-adjustable shelves</p> <p>5 Portable caster wheels</p>	 <p>1 TOGA® Filter System</p> <p>2 Internal purification flow</p> <p>3 Internal refrigeration flow</p>

## TOGA® Fridge

# Completely Closed Reagent Refrigerator

### Safely store refrigerated reagents

Innovative engineering maintains constant temperature in each compartment. Equipped with TOGA® filter technology to completely remove toxic gases generated reagents stored in the refrigerator.



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2019

Category		TOGA® Fridge Smart		TOGA® Fridge	
Product image					
Model		TOGA-UGSR11P (Single-Door)	TOGA-UGSR12 (Double-Door)	TOGA-GSR11P (Single-Door)	TOGA-GSR12 (Double-Door)
Size (W x D x H, mm)	Exterior	640 x 850 x 1930	1260 x 850 x 1930	640 x 850 x 1930	1260 x 850 x 1930
	Interior	550 x 700 x 1300	1170 x 700 x 1300	550 x 700 x 1300	1170 x 700 x 1300
Capacity		500L	1050L	500L	1050L
Temperature distribution		±2°C			
Temperature control range		2 ~ 10°C			
Refrigeration system	Refrigerant used	R-134a			
	Compressor	1/3 HP	1/2 HP	1/3 HP	1/2 HP
	Condenser	1/3 HP			
	Evaporator	1/3 HP			
Defrosting		Automatic defrosting			
Control unit (Display unit)		7" touchpad LCD display platform		LED display	
Reagent Management System		Available		-	
Voltage, Frequency		100~240V, 50/60Hz			
Power consumption		850W	1030W	850W	1030W
Filter Replacement Period (recommended)		1 year (Filter change intervals vary depending on the types, quantity, and concentration of reagents.)			
Frame		High-density urethane foam			
No. of shelves		5	10	5	10
Weight		150kg	200kg	150kg	200kg

## TOGA® Puri intelligent Standing / Portable

# Intelligent Toxic Gas Purifier (Standing/Portable)

### The ultimate toxic gas purification solution for your laboratory

TOGA® filter technology flagship product line. The Standing model is a room purification solution that will effectively and efficiently purify toxic gases that are generated during experimentation and from stored reagents. The Portable model works by purifying toxic gases at their source as they are generated while working with toxic chemicals ensuring that researchers are not exposed to any harmful gases produced as a byproduct. Adopt both models to create and maintain a healthy and pleasant indoor environment for researchers.



#### Features

- 1 Efficient toxic gas intake
- 2 Easy-to-use intelligent touch panel



- 3 Chemical-resistant motor with powerful suction
- 4 Sound-absorbing melamine board / Anti-vibration pad
- 5 Portable polyurethane casters

TOGA® Puri Intelligent Standing



#### Features

- 1 360° rotating non-articulated flexible arm
- 2 Easy-to-use intelligent touch panel
- 3 Handle designed with smooth curves for easy gripping
- 4 Chemical-resistant motor with powerful suction
- 5 Automatically retractor power cord reel for safe storage
- 6 360° portable durable caster wheels

TOGA® Puri Intelligent Portable

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GOOD DESIGN  
Award

GOOD DESIGN  
KOREA



Category	TOGA® Puri Intelligent Standing	TOGA® Puri Intelligent Portable
Product image		
Model	TOGA-S02D	TOGA-M01D
Size(W x D x H, mm)	500 x 450 x 1770mm	400 x 400 x 960mm
Absorption Efficiency	Absorbs over 99.7% of toxic gases, VOCs, acid, base, and fumes	
Filter Replacement Period (recommended)	1 year (Filter change intervals vary depending on the concentration levels and types of toxic gases generated.)	
Air Volume	-	10m <sup>3</sup> /min
Area Coverage	79.2m <sup>2</sup>	-
Power Consumption	169W	
Voltage, Frequency	100~240V, 50/60Hz	
Fan	5 level speed control	
Weight	110kg	65kg

## TOGA® Hood intelligent

# Intelligent Ductless Fume Hood

Portable, energy-saving ductless fume hood.

Equipped with TOGA® filter technology to purify toxic gases generated from chemicals used within the workstation. Intelligent technology extends filter life by controlling airflow velocity according to VOC levels. Powerful variable-speed fan ensures toxic gases generated stay within the workstation, minimizing researcher exposure. No ducting required and saves energy compared to traditional fume hoods. Portable and easily moved to new locations.



TOGA® Hood Intelligent

### Features

① Easy-to-use intelligent touch panel



② Transparent three-sided polycarbonate windows make work easy

③ Large hand openings provide inlet for external airflow and use convenience

④ Wheels for easy portability

### Optional

- Faucet and cup sink (easy to wash during an experiment)
- Anemometer (easy to check air flow speed in the hood)

Toxic Gas Removal

Longer Filter Life

Minimize Filter Breakthrough

No Harmful Byproducts

Environmental Protection

Energy Saving

Enhanced Convenience

Air Quality Monitoring

Category		TOGA® Hood Intelligent		Schematic diagram of toxic gas removal in the hood
Product image				<p>Flow</p> <p>TOGA® Filter System</p> <ul style="list-style-type: none"> <li>● Clean air</li> <li>● Room air</li> <li>● Fume (gas, vapor)</li> </ul>
Model		TOGA-DFH900	TOGA-DFH1200	
Size (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	
	Including frame	900 x 700 x 1945	1200 x 700 x 1945	
Weight		124kg	144kg	
External material		Steel (steel plate 1.2T) Pakmel powder coating, Polycarbonate (PC)		
Lower frame		50 mm x 50 mm x 1.4T square pipe		
Voltage, Frequency		100~240V, 50/60Hz		
Power consumption		101W		
Fan		100~240V/85W, 750CMH		
Lamp		LED light (11W)		

# TOGA® Osmium Gas Purification System

## Customized EHS Equipment

Purifies 99% of osmium gas, a harmful substance used for pretreatment.

Equipped with a custom TOGA® filter designed to eliminate and purify over 99% of osmium gas generated during pretreatment through reduction and adsorption. The negative pressure system ensures that air does not leak to the outside environment, keeping the laboratory environment safe.



Osmium Gas Purification System All-in-One



Osmium Gas Purification System Half Type

### Features

- 1 TOGA® Filter exclusive for osmium gas purification
  - Purifies over 99% of osmium gas via reduction and adsorption.
- 2 Easy-to-use intelligent touch panel
- 3 Polycarbonated window (All-in-One)
  - Transparent polycarbonated window for easy observation
  - Holes on the front side ensure smooth airflow and user convenience
- 4 Negative-pressure air current structural design
  - Prevents toxic gas leakage
- 5 Movable polyurethane caster



[Common]



[All-in-One]

[Half-Type]



Category		Osmium Gas Purification System		Schematic diagram of toxic gas purification
Product image				
Model		TOGA-SVE01(Half-Type)	TOGA-SVS01(All-in-One)	
Size (W x D x H, mm)	Exterior	800×300×582mm	700×610×1760mm	
	Interior	720×280×440mm	684×450×600mm	
Fume hood window		-	700×400×8.0T (Transparent polycarbonate)	
Materials		SPC 1.2T : White powder Coating		
		Aluminum profile frame		
Capacity		88L	185L	
Control unit		Touch control		
Connection Port		NW25 (Vacuum-Type)		
Voltage, Frequency		100~220V, 50/60 Hz		
Caster		Foot Master 40F, 4ea		
Lamp		-	LED (11W)	
Worktop of fume hood		-	Hairline stainless steel 304	

# Chemical Fume Hoods

## Fume Hood Purchase Guide

A Variety of fume hood options available to suit your needs.

High performance fume hoods ensure chemicals are contained and exhausted, keeping users safe.

### Select a material



Steel



Aluminum

### Select a series



All-in-One



Upper Type



Walk-in



Tabletop



#### Variety

• Wide range of fume hood types allow you to select the product that best suits your unique needs and situation.



#### Efficiency

• By-pass louver enhances exhaust efficiency by optimizing air inflow



#### Safety

• Corrosion-resistant utilities for safety and longevity  
• Baffle plate structure boosts effectiveness  
• Sliding sash for convenience

### Features of JE CUBE's Aluminum Profile Fume Hood

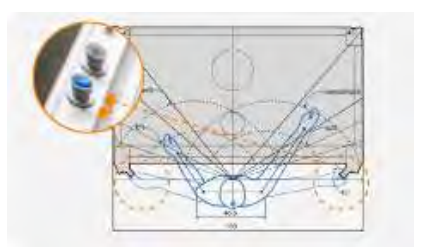


Durable and beautiful aluminum frame



Speed of the Air is Face Velocity

Safe exhaust airflow design



Ergonomic design considering user convenience



Durable, chemical-resistant materials



Convenient height-adjustable sliding door



Electric outlet with protective cover

## Ducted Fume Hood

# Fume Hood Line up

### Aluminum Profile Fume Hood - All-in-One

[Upper-Type]

The All-in-One Aluminum Profile Fume Hood is our general fume hood solution suitable for applications requiring the safe containment and removal of toxic gases, vapors, and fumes. Cabinets underneath the hood can be used for equipment storage.

### Aluminum Profile Fume Hood - Upper Type

The same toxic gas containment and removal as our All-in-One, minus the under cabinet.

Category	Aluminum Profile Fume Hood (All-in-One/Upper-Type)				
All-in-One	GAHP-G112	GAHP-G115	GAHP-G118	GAHP-G121	GAHP-G124
Upper Type	GAHP-G012	GAHP-G015	GAHP-G018	GAHP-G021	GAHP-G024
Size (WxDxH, mm)	Exterior	1200x800x2350	1500x800x2350	1800x800x2350	2100x800x2350
	Interior	1000x600x1030	1300x600x1030	1500x600x1030	1800x600x1030
Valve	Gas	1	1	1	1
	Water	1	1	1	2
	Air	1	1	1	1
Electric outlet	4	4	4	4	4
Cup sink	1	1	1	2	2
Lamp (30W)	1	1	1	2	2
Internal materials	Phenolic laminate 4T				
Exhaust vent	200ø / 250ø / 300ø				
Voltage, Frequency	100~240V, 50/60Hz				



[All-in-One]



#### Optional

- Anemometer
- Fan
- Available for nonstandard custom order

#### Features

- ① Reinforced supports for enhanced durability
- ② LED lamp
- ③ By-pass louvers
- ④ 5T tempered glass sliding
- ⑤ Fan button
- ⑥ Lamp button
- ⑦ Valve
- ⑧ Stopcock
- ⑨ Baffle Plate
- ⑩ Safe electric outlet
- ⑪ 30mm ceramite/phenolic laminate worktop
- ⑫ Anti-vortex bump (SUS 1T)
- ⑬ Detachable wide lower cabinet

### Aluminum Profile Fume Hood - Tabletop

Built to be installed on top of center or side-type laboratory tables. For center-type laboratory table installations, the inside of the hood is visible through the side windows.

[Central Type]



[Side Type]



#### Features

- ① Reinforcement supports inserted to enhance durability
- ② LED lamp
- ③ By-pass louvers
- ④ 5T tempered glass sliding door
- ⑤ Fan button
- ⑥ Lamp button
- ⑦ 5T tempered glass on both sides
- ⑧ Safe electric outlet

※ Identical functions and features for both Central Type and Side Type



#### Optional

- Anemometer
- Fan

#### Tip Why Tabletop Fume Hoods?

Most countries have regulations requiring that any experiments that generate toxic gases as a byproduct must be conducted within a fume hood. Table Top fume hoods allow experiments to be conducted safely on existing laboratory furniture without having to purchase full-size fume hood systems.

## Aluminum Profile Fume Hood – Walk-in

Safely handle fumes and odors while working with large-size equipment, and isolate work from cross contamination.

Category		Aluminum Profile Fume Hood (Walk-in)			
Walk-in		GAHP-W115	GAHP-W118	GAHP-W121	GAHP-W124
Size (WxDxH, 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	Gas	1	1	1	1
	Water	2	2	2	2
	Air	1	1	1	1
Electrical Outlets		4	4	4	4
Lamp (30W)		1	1	2	2
Internal materials		Phenolic laminate 4T			
Exhaust vent		200Ø / 250 Ø / 300 Ø			
Voltage, Frequency		100~240V, 50/60Hz			

### Features

- ① Reinforcement supports inserted to enhance durability
- ② LED lamp
- ③ By-pass louver
- ④ 5T tempered glass sliding door
- ⑤ Fan button
- ⑥ Lamp button
- ⑦ Valve
- ⑧ Baffle plate
- ⑨ Stopcock
- ⑩ Safe electric outlet
- ⑪ Door stopper
- ⑫ Shockproof stopper

### Optional

- Anemometer
- Fan
- Available for nonstandard custom-made



## Steel Fume Hood

Extremely strong and durable. Designed to safely contain and remove toxic gases

Category		Steel Fume hood				
Steel Type		GFHP-1200	GFHP-1500	GFHP-1800	GFHP-2100	GFHP-2400
Size (WxDxH, 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	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
Lamp (30W)		1	1	1	2	2
Electrical Outlets		220V 2ea			220V 4ea	
External materials		Steel (steel plate 1.2T) Pakmel powder coating				
Internal materials		4T phenolic laminate				
Door		5T tempered glass (upper/lower sliding door)				
Lower frame		50 mm x 50 mm x 1.4T square pipe				
Door sill		SUS 1T				
Exhaust vent		200 Ø / 250 Ø / 300 Ø				
Distribution box		300 x 400mm distribution box (220V circuit breaker : 1ea)				

### Features

- ① LED lamp
- ② External materials: Steel Pakmel powder coating
- ③ Internal materials: Phenolic laminate
- ④ Tempered glass sliding door
- ⑤ By-pass louver
- ⑥ Stopcocks (Gas/Water/Air)
- ⑦ Baffle Plate
- ⑧ Worktop: Ceramite/Phenolic laminate
- ⑨ Electric outlet 220V
- ⑩ Operating Valve (Gas/Water/Air)
- ⑪ Steel square pipe for lower frame
- ⑫ Wide lower cabinet

### Optional

- Anemometer
- Fan



## TOGA® Intelligent Laboratory Table System

### Smart Laboratory Table

#### The ultimate smart laboratory table system.

Integrated lab EHS (Environment, Health, and Safety) solution that combines TOGA® toxic gas filtration technology, air quality monitoring technology, IoT management technology and filtered chemical storage technology



#### Excellent Design Award

The Ministry of Trade, Industry, and Energy

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#### Features

- ① Integrated management system
- ② Table-top reagent storage
- ③ Air quality sensors
- ④ Toxic gas purification system

### Integrated Management System

Real time electronic MSDS look-up, lab communication features, and air quality monitoring integrated into a single easy-to-use system.



Instantly check MSDS for chemicals being used by scanning the reagent's RFID tag on the console. Ensures compliance with local regulations requiring MSDS to be made readily available.



Managers and users can share safety notices, manuals, etc. in real time, which maximizes laboratory operation efficiency.



Choose the gas sensors required depending on your individual application and monitor lab conditions in real-time via console, web or mobile applications.

## TOGA® Venti Table / TOGA® Safe Table

# Ventilated Laboratory Tables

### Laboratory table equipped with TOGA® toxic gas purification technology

Flexible exhaust arm allows for convenient toxic gas purification for experiments conducted on the laboratory table

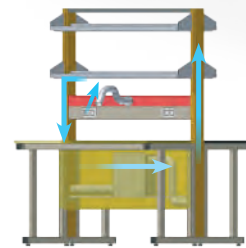


#### Toxic Gas Purification

- Flexible arm with strong suction power
- Remove toxic gases at their source before researchers can be exposed to them
- Arm is detachable and can be removed for convenience
- Center and side-table both available



Category	Center-Type Laboratory Table	Side-Type Laboratory Table
Model	GSPC-1000F Series (Plane-Type)	GSPS-1000F Series (Plane-Type)
	GSPC-2000F Series (Shelf-Type)	GSPS-2000F Series (Shelf-Type)
Table area	1050mm / 1200mm / 1500mm / 1800mm	
Depth	1500mm	750mm
Height	800mm (1800mm including shelf)	

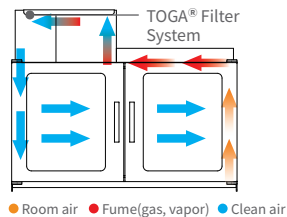
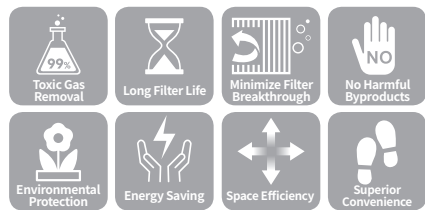


Schematic diagram of toxic gas purification

## Tabletop Reagent Storage

### Remove toxic gases and save space with tabletop reagent storage

Equipped with TOGA® filter technology to safely remove toxic gases generated from stored reagents. Can be installed on already purchased laboratory tables or added as an option on new purchases. Maximizes space efficiency and minimizes unnecessary movements



TOGA® Safe Table, Center Type

TOGA® Safe Table, Side Type



Center-Type Table Reagent Storage		TOGA-PC1050	TOGA-PC1200	TOGA-PC1500	TOGA-PC1800
Size (W x D x H, mm)	Exterior [Including 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

Side-Type Table Reagent Storage		TOGA-PS1050	TOGA-PS1200	TOGA-PS1500	TOGA-PS1800
Size (W x D x H, mm)	Exterior [Including 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

## Laboratory Table

# Laboratory Table Selection Guide

### Types of laboratory tables

#### Aluminum Profile Laboratory Table

Beautiful aluminum laboratory table with robust interior and surface



Materials

#### Steel Laboratory Table

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

#### Center-Type Laboratory Table

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



Location

#### Side-Type Laboratory Table

Single-sided laboratory table designed to be placed up against a wall or a window.

#### Shelf-Type Laboratory Table

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



Shelving

#### Plane Laboratory Table

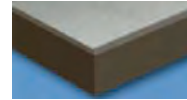
Premium, high-quality, durable laboratory furniture

### Worktop Surfaces



#### Welltop (Basic)

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



#### Wilsonart (modifiable)

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



#### Trespa (modifiable)

- Superior chemical resistance
- 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

## Center-Type Laboratory Table & Side-Type Laboratory Table



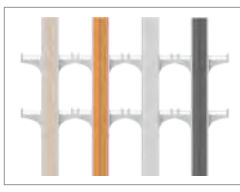
Category	Center-Type Laboratory Table		Side-Type Laboratory Table	
	Shelf Type	Plane Type	Shelf Type / Upper Cabinet Type	Plane Type
Features	<ul style="list-style-type: none"> <li>• Cabinets and sink options available</li> <li>• Convenient flow of movement and efficient space utilization</li> </ul>		<ul style="list-style-type: none"> <li>• Cabinet options available</li> <li>• Convenient flow of movement and efficient space utilization</li> </ul>	
	<ul style="list-style-type: none"> <li>• Double-sided</li> <li>• Two-layer TOGA® filtered tabletop storage installation available</li> <li>• Fall prevention structure</li> <li>• Convenient laboratory equipment storage and use</li> </ul>	<ul style="list-style-type: none"> <li>• Wide working space</li> <li>• Large laboratory equipment and apparatuses may be used easily and conveniently</li> </ul>	<ul style="list-style-type: none"> <li>• Two-layer TOGA® filtered tabletop storage installation available</li> <li>• Fall prevention structure</li> <li>• Convenient laboratory equipment storage and use</li> </ul>	<ul style="list-style-type: none"> <li>• Optimized for use in small spaces</li> </ul>
Options	Laboratory Table w / Toxic Gas Purifier	○	○	○
	Integrated management system	○	○	○
	Tabletop Reagent Storage	○	Contact us for options	○
Size(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 component	Built-in electric outlet (110V, 220V)			
Optional component	Drawer / Cabinet / Single-sided sink / Double-sided sink		Drawer / Cabinet / Upper cabinet	

## Laboratory Table

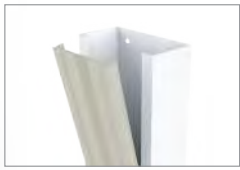
# Aluminum Profile Laboratory Table



Center-type laboratory table equipped TOGA® tabletop reagent storage and toxic gas purification system



**Post-finish Paneling**  
Color options can be selected based on style and application.



**Utility Line**  
Detachable covers for easy utility line management. May be used for gas, water and power lines.

### Features of Aluminum Profile Laboratory Table

<p><b>1 AL profile</b></p> <ul style="list-style-type: none"> <li>Anodizing treatment on the surface forms an oxidized aluminum film that enhances strength and prevents corrosion.</li> <li>Beautiful aluminum frame</li> <li>H frame structure and optimized structural design for stability</li> <li>Beautiful curved Al profile cap</li> </ul>	<p><b>2 Stainless steel pipe / Al bar and side safeguard</b></p> <ul style="list-style-type: none"> <li>Anti-spill guard and corrosion-proof powder-coated aluminum shelf</li> <li>Adjustable height to keep laboratory glassware and reagent bottles of different sizes</li> <li>Unique TOGA design</li> </ul>	<p><b>3 Worktop</b></p> <ul style="list-style-type: none"> <li>Various worktop surfaces available according to user preference and application</li> <li>Ceramite, epoxy top, phenolic laminate, and chemical-resistant top</li> <li>Anti-bacterial surface available as an option</li> </ul>	<p><b>4 Cabinets</b></p> <ul style="list-style-type: none"> <li>Portable</li> <li>Simple and elegant aluminum handle and profile</li> <li>Made of ergonomic 18T P.B LPM for maximum stability and convenience</li> </ul>
			<p><b>PIN UP</b> DESIGN AWARDS <b>2017</b></p>
<p><b>5 LED lighting (Optional)</b></p> <ul style="list-style-type: none"> <li>Installed under the shelf for enhanced convenience and improved visibility</li> </ul>	<p><b>6 Utility box</b></p> <ul style="list-style-type: none"> <li>Standard: 220V</li> <li>Optional: 110V</li> </ul>	<p><b>7 Adjustable Foot</b></p> <ul style="list-style-type: none"> <li>Horizontal and height adjustment</li> </ul>	

## Aluminum Profile Laboratory Table & Steel Laboratory Table

### Aluminum Profile Laboratory Table Features

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

### Steel Laboratory Table Features

- Steel frame's chemical resistance enhanced through 200°C heat treatment following Pakmel powder coating
- Outstanding strength



Aluminum Profile Laboratory Table



Steel Laboratory Table

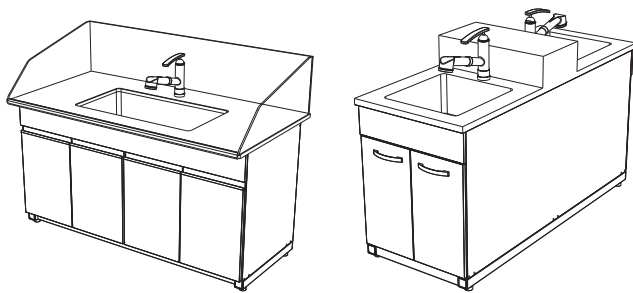
## Laboratory Table Extras

### Optional Add-Ons

#### Laboratory Sink Table

- Double-sided and one-sided sinks available according to user preference
- A PP sink bowl enhances chemical resistance. A combined faucet may be also installed upon request.

Type	Model	Size (W x D x H, mm)
Laboratory table with single-sided sink	GWP-S1500	1500 x 600 x 800/950
Laboratory table with double-sided sink	GWP-S600	600 x 1500 x 800/950



Laboratory table with single-sided sink

Laboratory table with double-sided sink

#### Optional



Glassware drying rack



Eye shower



Water guard



Faucet

#### Drawer / Cabinet / Upper Cabinet

Type	Model	Size(W x D x H, mm)
Drawer	Movable	450 x 540 x 700
Cabinet	Movable	450 x 540 x 700
		600 x 540 x 700
		900 x 540 x 700
		1200 x 540 x 700
Upper cabinet	Basic	1050 x 300 x 345
		1200 x 300 x 345
		1500 x 300 x 345
		1800 x 300 x 345



Upper cabinet



Drawer



Cabinet

#### Corner Laboratory Table

- Optimal space utilization.

Materials	Size(W x D x H, mm)
Steel / Aluminum	1000 x 1000 x 800



# TOGUARD ALL-in-One

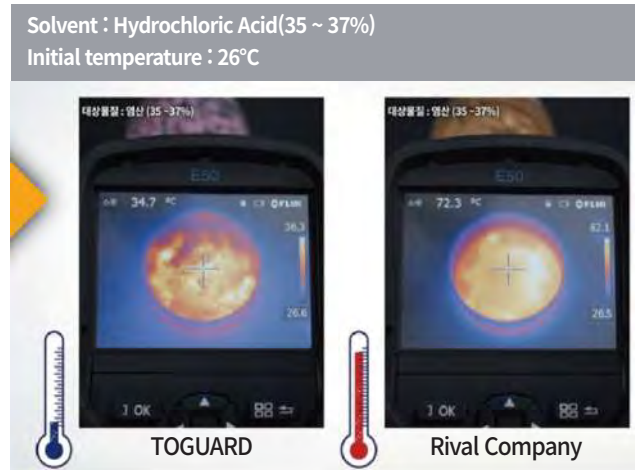
## Chemical Absorbent and Neutralizer Agent

TOGUARD simplifies the initial reaction time and procedure by treating chemicals more safely with relatively high density and absorption rate.



TOGUARD®

### Compare heat with other product.



TOGUARD Ensure safty at temperature below 35°C

TOGUARD of GTSCIEN was used for 10mL of the solvent and the exothermic reaction was 27 ~ 3 5°C or lower.

The exothermic reaction was insignificant.

Under the same conditions, the competitor “A” generates e xplosive exothermic reaction of 70 to 75°C. There is a risk of burns.

### Simple Manual

<b>1</b> Accident Occurs	<b>2</b> Absorb the spill	<b>3</b> Create an embankment to prevent spill spread	<b>4</b> Safely dispose the reated material

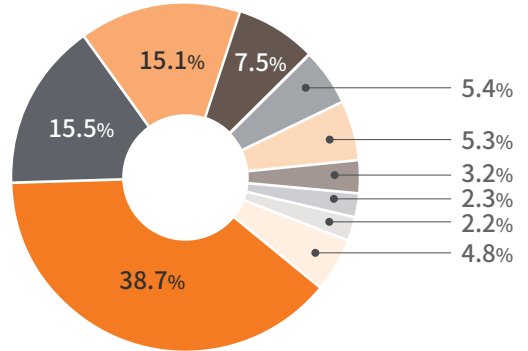


Category	Capacity	Comprehensive	Acid/Base Neutralizer	Fuel&VOC Neutralizer
Chemical Neutralizer	500mL	TOGUARD-NA5	TOGUARD-NAB5	TOGUARD-NO5
	1L	TOGUARD-NA10	TOGUARD-NAB10	TOGUARD-NO10
	1.8L	TOGUARD-NA18	TOGUARD-NAB18	TOGUARD-NO18
	18L	TOGUARD-NA180	TOGUARD-NAB180	TOGUARD-NO180
Chemical Absorbent	500mL	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

# Key Customers

## Customer Distribution by Field

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



## Business / Private Sector



## Government / Public Sector



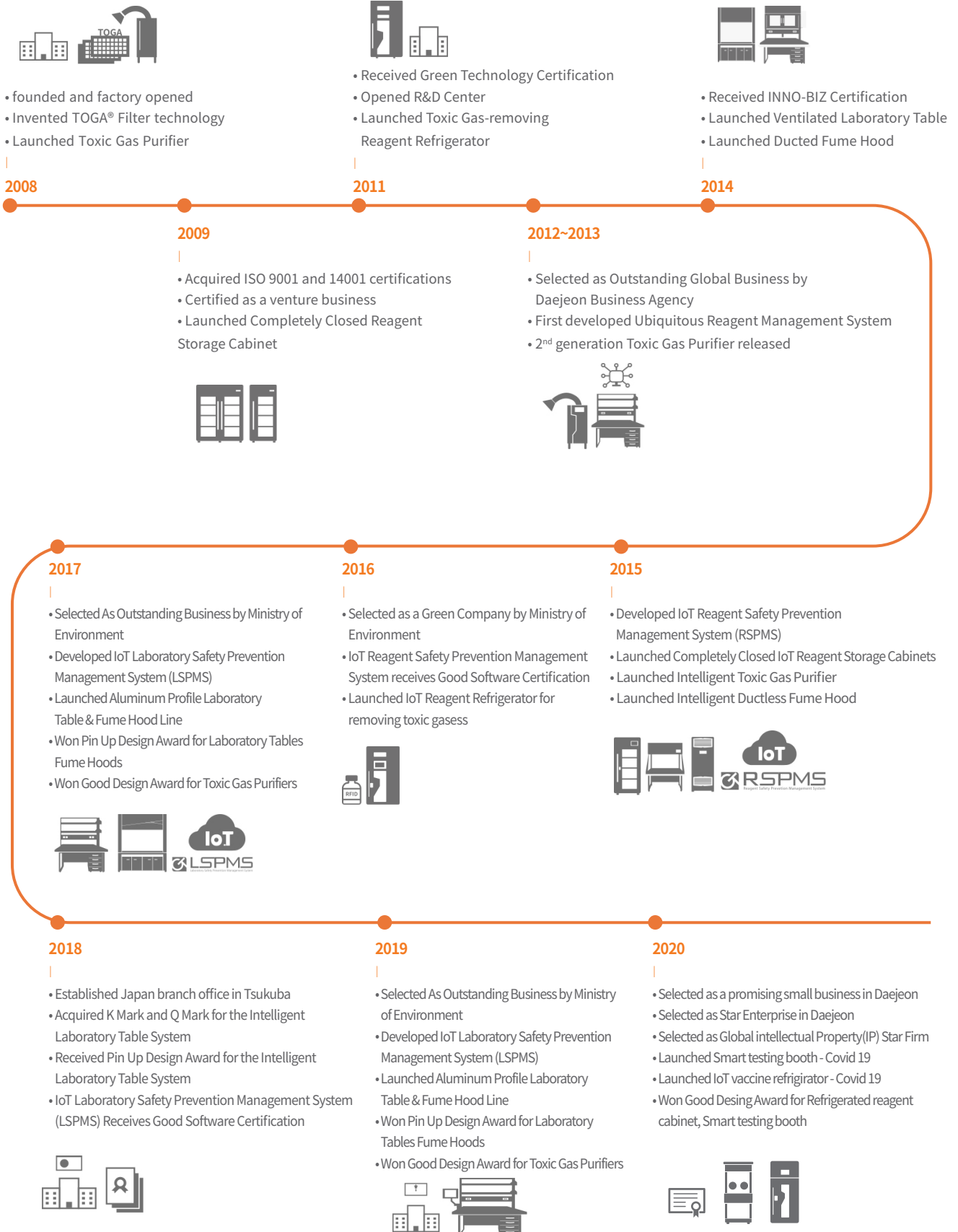
## College / Education



## Research Institutes



# Company Timeline



# Patent / Certification / Awards

## Foreign Patents

### USA

- Apparatus for Purifying and Neutralizing 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



## 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



## 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





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