



# Scrubber Systems

# Scrubbers

## Chemical Gas Washing Systems

The harmful gases and odors caused by the activities of industrial facilities and enterprises pose a great threat to human and environmental health. It is necessary to develop some systems to protect our environment from these harmful substances.

Gas purification systems installed in this direction contribute significantly to ensuring environmental safety. ERGIL Chemical Gas Washing Systems prevents the formation of acid rain by purifying the acidic gases from the exhaust before being released into the sky.

## Clean Air is a Basis Of a Healthy Life



In the gas treatment system, the working principle of which is to wash the waste gases under raschig rings, the principle of absorption of gases by liquids is applied. The gas aimed to be purified is taken from the environment with the suction fan and forced to go up through the raschig rings. Thanks to the gravity force and the sprinkler system, the water that goes down and the gas that encounters in these rings breaks up and encounters as much surface as possible in the liquid phase. Thus, the gases coming out of the "scrubber" chimney are free of harmful contents. However, the remaining liquid has turned into acid and is highly corrosive. In this case, the pH value of the liquid phase, which is acidic, is increased to be basic or neutral with the dosing system during the cycle. Thus, it is aimed to increase the durability of the system and to decrease the saturation of the liquid phase in the gas absorption process. ERGIL Scrubbers help to provide safer systems and environment. ERGIL Scrubber Systems protects the environment, workers and surrounding communities by removing harmful hail gases even in harsh tank conditions and extreme temperatures.



# Why Choose A Scrubber?

---

The scrubber can handle high-temperature streams and very moist streams. It also provides smaller space requirements.

In some cases, scrubbers can be retrofitted into current equipment. Also, they can provide cooling of heated gases. The scrubber, which has a higher desulfurization capacity compared to other equipment, has a low purchase cost. It can cool the heated gases and neutralize highly corrosive gases and dust.

On the other hand, it can remove gases and particles in a single unit. When properly designed and operated, it can handle highly flammable dust with a very low risk of explosion. Depending on the specific output and applications, it has several customizable features that usually allow a cost reduction. Depends on customer demand IoT can be addable.

With the use of the ERGIL scrubbers' heat reduction options, the temperature limit is eliminated. ERGIL scrubbers eliminate as much or more than 99% of dangerous gases, which meets all EPA requirements for RACT, BACT, and LAER.



# How To Use Scrubber?

ERGIL wet scrubbers are used to treat or clean the following lists of chemicals from a process exhaust air stream, with ammonia being the most popular:

- Ammonia
- Chlorine
- Hydrochloric Acid
- Chlorinated Silanes
- Sulfur Oxides
- Nitrogen Oxides
- Hydrogen Sulfide
- Boron Trifluoride
- Amines

They Provide Treatment  
With Efficiency Rates Of

**Up To**  
**%**  
**99**

With its 40 years of experience, ERGIL has developed solutions for these industries:

- Asphalt Processing
- Pharmaceuticals
- Oil & Gas
- Landfills and Biogas
- Textile Processing
- Tar Removal
- Curing Ovens
- Vinyl Manufacturing
- Acid Mist Control
- Fertilizer Manufacturing
- Wastewater Treatment
- Steel Processing
- Electronics
- Food Processing
- Cocoa Processing
- Nuclear Waste Filtration
- Printing
- Precious Metal Recovery
- Wood Products



# The Air We Breathe Sustains Us

## Where Scrubber Systems Are **Not** Present:

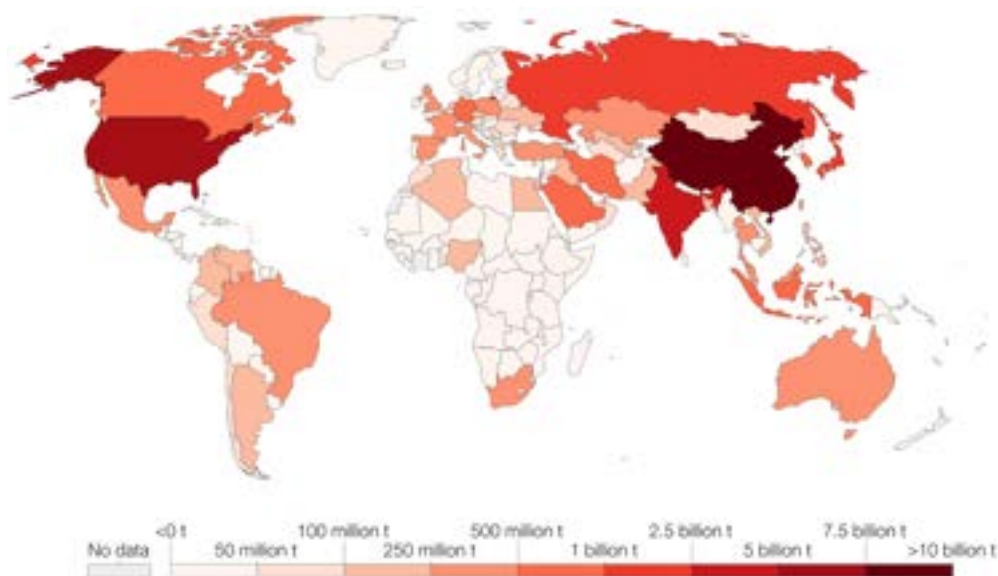


- Inhaling the acidic gasses present in the environment is a great danger to human life and may lead to respiratory problems.
- The toxic gasses that rise from the facility can turn into acid rains which is a serious threat to the people living in the area.
- The formation of acid rains damage buildings and pieces of equipment in the area and increases the maintenance costs.
- Absence of Scrubber Systems leads to the destruction of wildlife and agricultural activities in the area.

## Where Scrubber Systems Are Present:

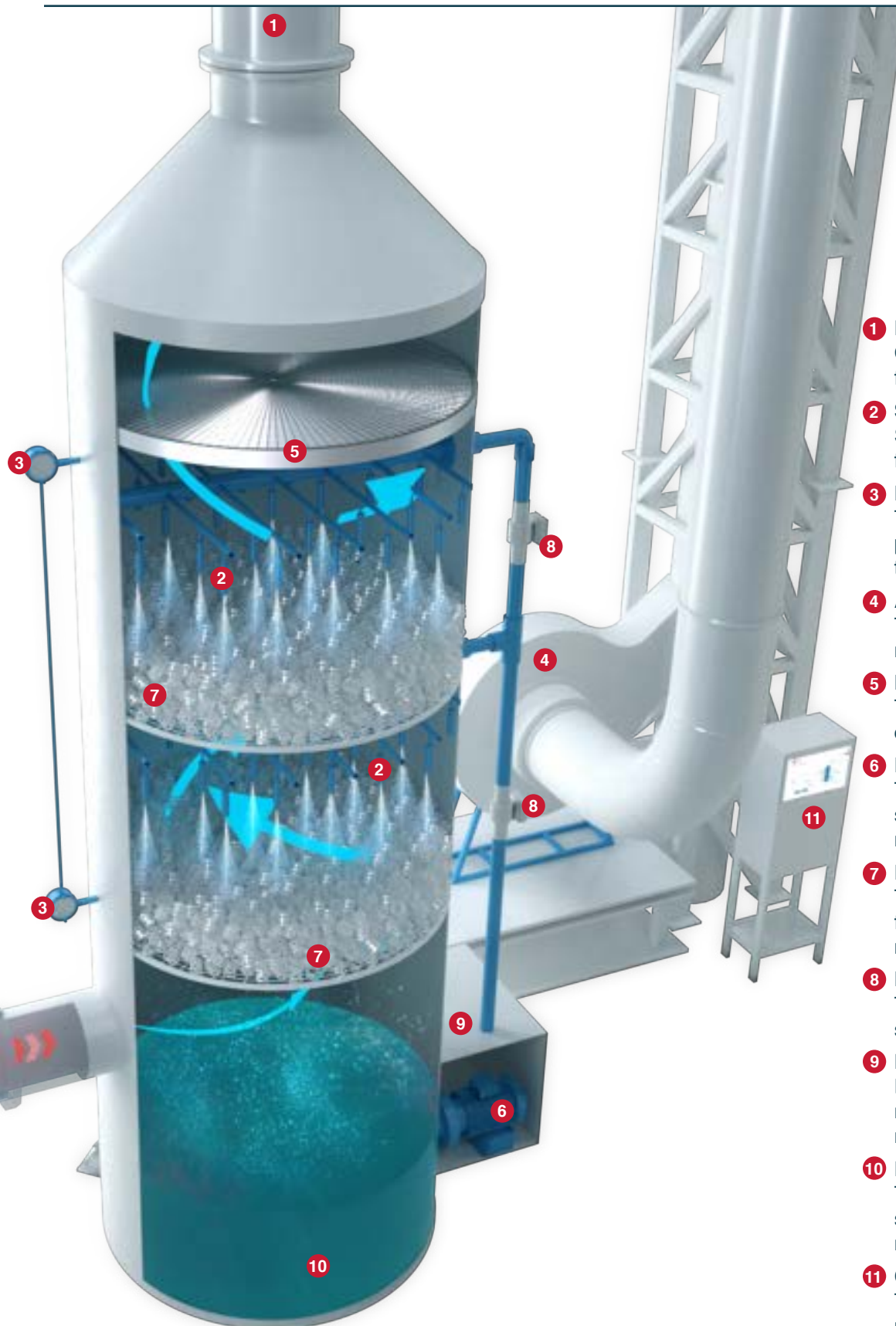


- ERGIL Scrubber Systems encapsulates acidic gasses and prevents people in the area from getting affected by its dangers.
- In places where Scrubber Systems are present, the formation of acid rains is prevented.
- Installing Scrubber Systems decreases corrosion-related damage and maintenance costs.
- Scrubber Systems prevents the soil, water, air pollution which stems from industrial wastes.
- They provide treatment with efficiency rates of up to 99%.



Annual CO<sub>2</sub> Emissions - 2019

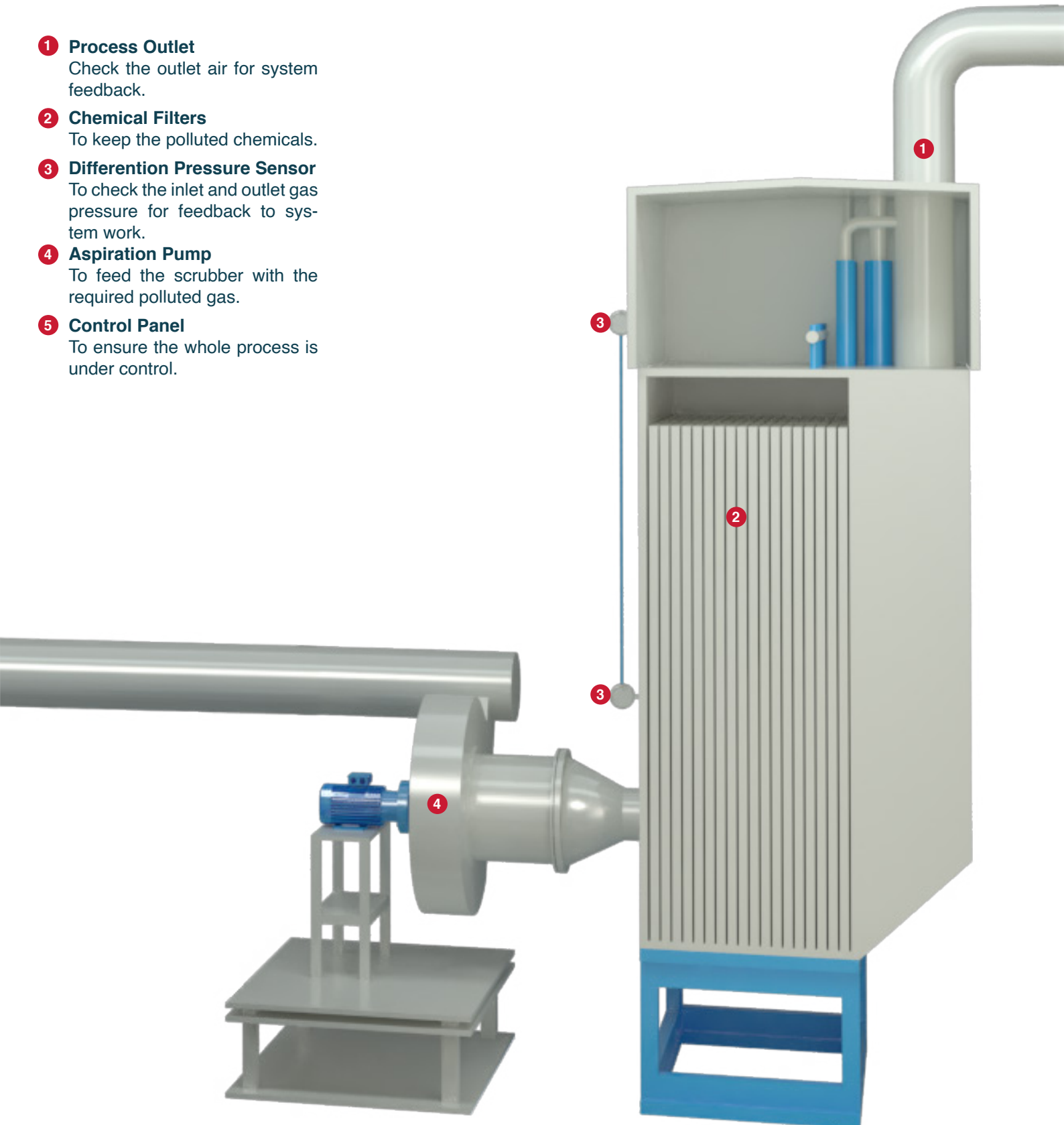
# What Is **Wet Scrubber** ?



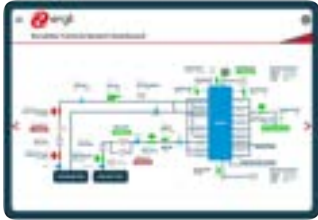
- 1 Process Outlet**  
Check the outlet air for system feedback.
- 2 Spray Nozzles**  
Spraying the chemical solution for better distribution.
- 3 Differentiation Pressure Sensor**  
To check the inlet and outlet gas pressure for feedback to system work.
- 4 Aspiration Pump**  
To feed the scrubber with the required polluted gas.
- 5 Mist Eliminator**  
To keep the pulverised chemical solution inside the scrubber.
- 6 Recirculation Pump**  
To recirculate the chemical solution at the scrubber until reach the setted pH value.
- 7 Pall Ring (Rashing)**  
To distribute the polluted gas for better contact to chemical neutralisation solution(CNS).
- 8 Flow Control Valves**  
To supply required CNS to scrubber with correct flow rate.
- 9 Dosing System**  
Dosing the scrubber with the required chemical when the pH reached the setted value.
- 10 Recirculation Tank**  
To collect the CNS inside the scrubber for reused until pH reached the setted value.
- 11 Control Panel**  
To ensure the whole process is under control.

# What Is Dry Scrubber ?

- 1 Process Outlet**  
Check the outlet air for system feedback.
- 2 Chemical Filters**  
To keep the polluted chemicals.
- 3 Differentiation Pressure Sensor**  
To check the inlet and outlet gas pressure for feedback to system work.
- 4 Aspiration Pump**  
To feed the scrubber with the required polluted gas.
- 5 Control Panel**  
To ensure the whole process is under control.



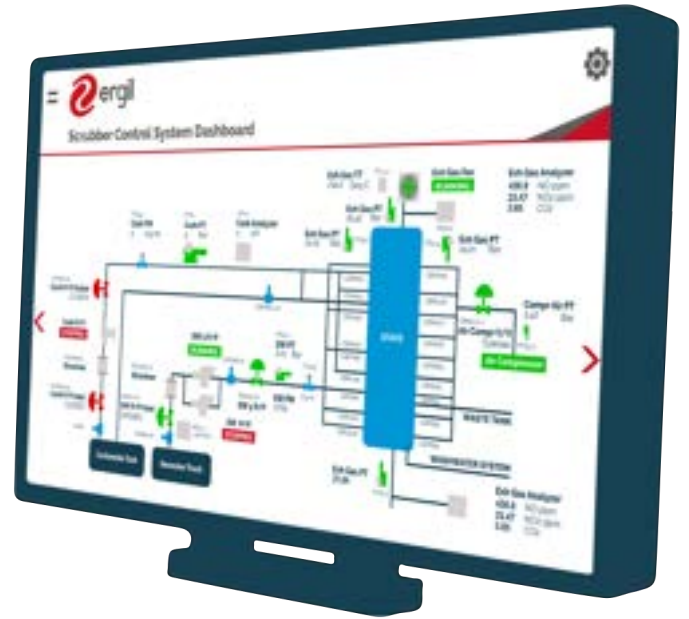
# Fully Automated Systems



Are you interested to control your scrubber systems operations automatically and monitor operations from your control room? System can also be monitored and controlled from our smart App and send SMS or e-mail notifications.



ERGIL provides full automated scrubber systems that can be integrated into your existing control system. Having an automated system helps you to reduce man power manual help, accident risks and equipment hazards. Behind the all products we produce, there is 40 years engineering expertise and insights we get from hundreds of happy customers around the globe.



## R&D Studies Supported by Academic Research

Ager engineers carry out intensive R&D studies on Scrubber Systems. During these studies, support is supplied from institutions such as Çukurova University and joint laboratory studies are carried out. Pollutant gas scrubber tests were carried out at Çukurova University, Faculty of Science and Literature, Department of Chemistry, and patents still continue. In the ongoing experiments, studies are carried out on the chemical solutions that will clean the pollutant gas, the concentration (density) of the dilutions, the amount of chemical solution required depending on the pollutant gas flow rate. According to the experimental results; reaction stoichiometry was deduced, critical pH values of the system were determined. As a result of these studies, Ager Scrubbers are continuously developed to be durable and resistant to more intensive use.

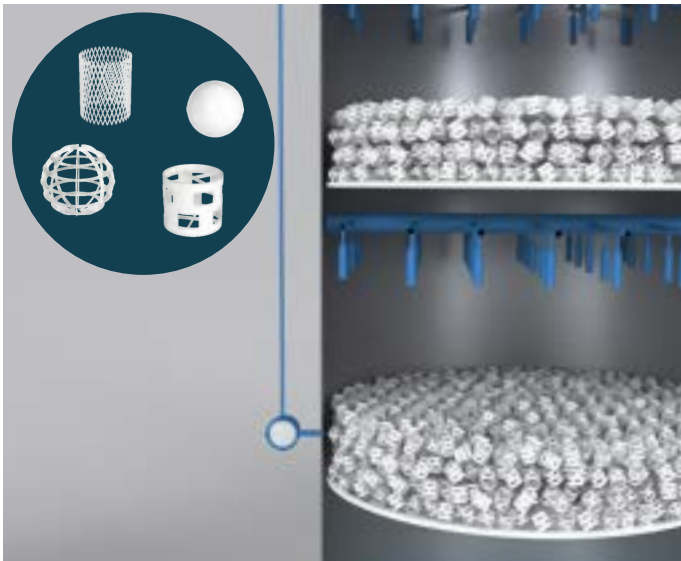




# After Sales Support

## 1 Periodical Maintenance

All industrial products need periodic maintenance after they are used, and this need should be supported by a solid engineering experience. After Ergil provides you with the appropriate solution for your needs, it also provides the necessary periodic maintenance support for you to use your product for many years. Thanks to our advanced CRM system, maintenance days are automatically reminded to you and tracked.



## 2 Spare Parts Supply

Ergil offers the spare part support you need to continue using your Scrubber system safely and with maximum performance. It is our priority that your production is not interrupted. For this reason, our technical team regularly checks the stocks of spare parts required for your product. When your need arises, Ergil can supply spare parts in the fastest and most trouble-free way.



## 3 Performance Evaluation

After the supply of your product, we cooperate with you for the performance evaluation of your product as an after-sales service. Periodically, product performance evaluation is made.



## 4 Capacity Change Consultancy

Production needs change over time. We are with you when you go to increase capacity or when additional processes are added to your system. Our engineers prepare an analysis of your existing Scrubber system and your optimum needs are determined.



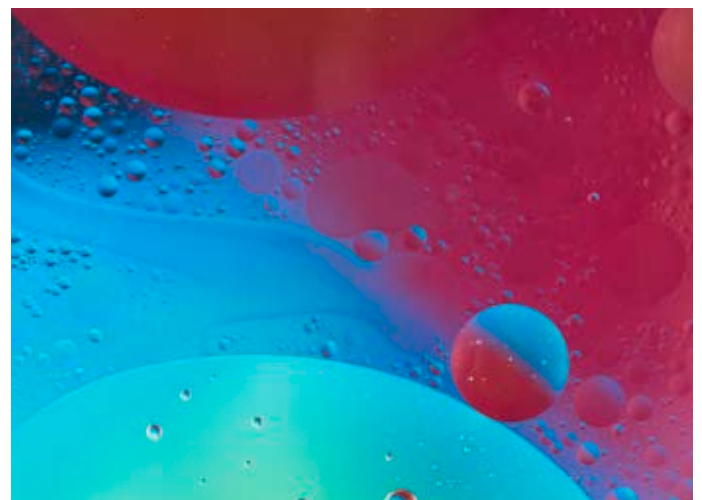
## 5 Remote Control and Intervention

Our Scrubber System has an advanced automation capability. Thanks to our AI-based Scrubber automation system, 24/7 control and supervision can be done. When necessary and only with your authorization, our software engineers can report on the current status of your system and create a time plan for the required maintenance.



## 6 Waste Management

Within the framework of the Industrial Waste Management Plan, the most suitable Scrubber model is created for your company. An intensive R&D work is carried out to ensure that the resulting waste has a minimum impact on the environment.



# 40 years of experience

35.000  
SQUARE METER  
MANUFACTURING  
SPACE



300+  
EMPLOYEES



200+  
DIVERSE RANGE  
PRODUCTS



30+  
INTERNATIONAL  
REPRESENTATIVES



40  
YEARS  
OF EXPERIENCE



5 MAIN  
OFFICE



QUALITY  
CERTIFICATES



AT 4  
REGIONS



Äger is an energy, water, marine, and mining industry focused company that provides various kind of products for storage tank terminals, pipelines, refineries, chemical and industrial plants, water treatment facilities, electricity, and alternative energy.

Our aim is to provide highest quality products for environmental protection, safety, storage, process, filtration. Our technology protects environment, your assets and human life.

## Äger GmbH

Germany Head Office + R&D + Sales  
Herzogspitalstraße 24  
Munich 80331  
Germany  
+49 89 9040 5200  
www.aager.de  
sales@aager.de

### Azerbaijan Sales + Warehouse

Ahmad Racabli 222  
Royal Plaza  
5th floor, Suite 8  
Baku, Azerbaijan AZ1106  
+994 (12) 564 2256  
sales@ergil.com

### U.A.E. Sales + Warehouse

Jumeirah Lake Towers, X2 Tower 1906  
P.O. Box: 123661 Dubai, U.A.E.  
+971 4 450 8051  
+971 4 450 8041  
sales@ergil.com

### Turkey Head Office + Sales

Ağaoğlu My Office 212  
No: 3 B Blok /175  
P.K 34218 Güneşli – Bağcılar  
Istanbul / Turkey  
+90 212 485 40 07  
+90 212 485 40 42  
www.ergil.com  
sales@ergil.com

### Turkey Factory + Engineering + R&D + Sales

Mersin Tarsus OSB.13.CD.NO:7  
P.K: 33540 Mersin, Turkey  
+90 324 676 44 04  
+90 324 676 44 03  
sales@ergil.com



#### brochure series

Scrubber Systems

Revision No: 01  
ER-BR-SS-02.21/V1  
ergil.com

February 2021

Ergil®  
Website QR Code

