

# SSTR-54 Vapor Scrubber System



**Multi-Use Mobile Emission Control System**

**[www.vapor-tech.com](http://www.vapor-tech.com)**

Visit our website for a comprehensive listing of our products and technical information



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## SSTR-54 Vapor Scrubber System

Vapor Tech offers a rental emission control system designed for a variety of hazardous and/or odorous vapors. This system consists of three, 54" x 8' towers. A large 1300 gallon reservoir sits below the towers. [This system satisfies the EPA requirement for proper emission control devices which yield an efficiency of over 98% \(40 CFR 61 Subpart FF\).](#) It is designed to be connected to tanks, centrifuges and/or dryers to provide emission/odor control. This unit is trailer mounted, making it completely mobile. Furthermore, the system is rated up to 6000 CFM, making it ideal for moderate to large tank cleaning applications. An optional 4000# radial-type carbon unit is an option which can guarantee 99.9% removal of most contaminants.

The system is fairly simple. First, the vapors flow through each of the towers where cohesion takes place between the vapor and the chemical media (through the interaction with the packing media in the towers). Most of the vapor is captured or neutralized during this stage. The vapors are then directed through the carbon bed (optional) where they are polished (up to 99.9% in most cases). Many different types of chemicals may be used in this scrubber system. Whether you want to scrub out hydrocarbons, hydrogen sulfide or amines this unit has the capability since it is merely a function of the chemistry. Vapor Tech personnel can help assist you in determining which chemical media will provide the highest removal efficiency. We have over 75 years combined environmental and chemical experience to fall back on.

Lastly, not only are our scrubber systems unique in their design and practicality, they are very safe. We are the largest portable vapor scrubber system leasing company for a reason; companies trust our reputation and dedication to safety.



# Applications

Below is a sample list of applications and an estimated removal efficiency using the SSTR-54 system (some with carbon polish)

HAZARDOUS VAPOR / VOC NEEDING REMOVAL	POSSIBLE REMOVAL EFFICIENCIES
EDC	99%
Acids	99.9%
Amines	99%
Acrylates	99%
Mercaptans	99%
Hydrogen Sulfide	99.9%
Wastewater Odors	99%
Hydrocarbons (BTEX, Etc.)	99%
Contact Vapor Tech for other applications...	

## Scrubbing Chemicals

Vapor Tech offers many types of chemicals for use in our scrubber systems. Generally, for hydrocarbon applications, our CARBONIL line of products is used for maximum scrubbing efficiency. For H<sub>2</sub>S, our Enviro-Scrub VT provides 99.9% removal. To achieve the highest efficiencies and safety, it is crucial that the scrubbing media is tailored to your specific vapor stream. Through our vast experience in the chemical and vapor scrubber industry, we will optimize the equipment and chemical needs of your specific application. Contact us if you need further information.



# SSTR-54 Specifications

## Operational Parameters

Maximum Flow Rate (CFM)	6000
Minimum Flow Rate (CFM)	500
Maximum Pressure (PSI)	2
Maximum Temperature (°F)	140
Pressure Drop Across System (@ 3000 CFM) with Carbon	Approximately 12" of water
Pressure Drop Across System (@ 3000 CFM) without Carbon	Less than 3" of water

## Vapor Scrubber Specifications

Overall Unit Footprint (Trailer Size)	8'W x 20'L
Trailer Type	Gooseneck
Empty Weight (Pounds)	9,500#
Vapor Inlet	12" 150#
Vapor Outlet (From Scrubber Tower #2)	12" 150#
Number of Towers	3
Tower Diameter (Inches)	54
Packing Height (Feet)	15 (Total for all 3 Towers)
Reservoir Capacity (Gallons)	1300
Re-Circulation Pump Type	Electric Centrifugal
Number of Pumps	1
Utility Required for Pump	460V 3 Phase
Electric Consumption	30 Amps (Pump), 50 Amps (3000 CFM Blower)
Available Blowers	750, 1500, and 3000 CFM
Unit Equipped with Mist Eliminator?	YES (Located in 3rd tower)

## 4K Radial Carbon Polisher Specifications (Optional)

Surface Area (Cubic Feet)	132
Carbon Capacity (Pounds)	4000
Maximum Pressure	2 psi
Temperature Gauge	No
Inlet/Outlet	18" Duct
Cleanout / Service Port	Removable Top Lid

# Operating Instructions—SSTR-54 Vapor Scrubber System

## Placement:

Set unit on level grade and attach grounding cable. Once set, use jacks on rear of the trailer to take weight off of axles during operation. When scrubbing flammables, always make sure scrubber is properly grounded.

## Introduction of Chemical Media:

Make sure drain valves are closed. Open 2" fill cap and add chemical media. See section on 'Chemicals' to find out about recommended dilution rates. Once the chemical has been added and diluted (water based only) with water, make sure level is not above Maximum Fill Mark ( shown near sight gauge). The vapors need this airspace in the top of the tank to be able to flow through each tower. Filling the reservoir or allowing the liquid to accumulate past the 75% capacity could raise system back-pressure or completely block airflow to tower #1.

*Note:* If you are using a water-based encapsulator like CARBONIL, make sure you add de-foamer prior to running. Foam is detrimental for scrubbing efficiency in wet scrubber systems.

## Connection of Pump & Blower:

If using pump provided with unit, wire power to control box and open suction and discharge valves.

## Unit Operation:

Once chemical has been added, the unit should be ready to run. Connect vapor line to unit. 'Bump' pump to make sure rotation is correct. If not, re-wire so that motor is spinning in correct direction. Next, start pump and check for unusual sounds. Make sure suction and discharge valves are completely open. Adjust flows on each tower till they read maximum values. On-board pump should be able to provide 30 GPM to each tower. If this is not adequate, Vapor Tech offers a larger pump which will deliver 50GPM to each tower. Once chemical media is stable, pipe one or both vapor inlets to vapor source. Begin introducing vapors to the vapor scrubber. When done, disconnect and drain chemical media as well as remove carbon. When using surfactants such as Carbonil, always watch for foam. Adding de-foamer regularly is recommended.

## Chemical Tolerances:

With most water-based solutions like CARBONIL, once the chemical is saturated it will begin to turn opaque. When the solution starts to turn, it is advisable to drain and re-fill with fresh solution. For solutions which operate off of pH (ie. EZ-STRIP), simply monitor the pH regularly and add chemical as needed to maintain your optimal set point.

## Carbon Tolerances:

The carbon unit must be watched for exothermic reactions. When scrubbing hydrocarbons, always keep an eye on the temperature gauges located on the side of the carbon vessel. We usually recommend not allowing the temperature to rise above 140F. If the temperature rises above 140F, we recommend opening the liquid purge valve to cool down the carbon media. In case of high temperature situation, **NEVER** shut down blower. Isolate vapor source and allow fresh air to cycle through unit.

## Scrubber Temperature Limits:

The packing media in the scrubber is good up to 140F. In the case of a cold climate, anti-freeze may be added to the reservoir to help reduce the chance of freezing. Contact Vapor Tech for chemical compatibilities with anti-freeze.