CO395Flex™

The Model CO395Flex™ Certification Oven is a stand alone version of the permeation tube oven used in the KIN-TEK 491Flex™, Modular Gas Standards Generating System.

Permeation tubes require several hours for the emission rate to stabilize after a temperature change. This can be a challenge if the Gas Generator is used intermittently or switched between applications. The CO395 is a compact, economical unit designed to maintain permeation tubes in a constantly equilibrated state, ready for immediate use in each application. This feature is especially useful for standards laboratories where the weight loss rate of the tube(s) is continually monitored to insure accuracy, or when permeation tubes are unexpectedly needed to trouble shoot an analyzer. It also saves hours of calibration time by providing pre-heated tubes ready for immediate use.

CLICK HERE TO VIEW PRODUCT BROCHURE (PDF)

Features
The CO395Flex™ features open frame construction for easy access to the

permeation tube. An on board constant- differential-pressure flow controller insures constant flow over the permeation tube. Temperature can be controlled at any value from approximately 30°C (at least 5°C above ambient temperature) to 150°C. Temperature settings are NIST traceable to ±0.1°C to insure minimum upset when changing applications.

Technical Information
Dimensions: 9” wide X 5 1/4” deep X 8” high
Weight: Approx. 5 1/2 lb.
Power: 115 V, 1 A peak (230V optional)
Temperature Range: Typically 30° (5°C above ambient) to 150°C; digitally set in 0.1°C increments. (no temperature indication)
Flow: Typically 100 cc/min. Adjustable from 20 cc/min. to 200 cc/min. (no flow indication)
Tube Capacity: Accepts disposable permeation tubes, KIN-TEK refillable tubes, and diffusion tubes. Holds up to 8 disposable tubes, one refillable tube, or 1-2 diffusion tubes.

Certification Oven 395Flex

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CO 395Flex Brochure | KIN-TEK

Solutions

Below are several KIN-TEK solutions that have KIN-TEK Trace Source™ Disposable and Refillable Permeation Tubes and Gas Standards Generators. Perhaps your application is in one of these areas:

Industries & Institutions with KIN-TEK Solutions

- Airport Security
- Analyzer Manufacturers
- Aerospace
- Aviation
- Biological Sciences
- Energy
- Engines
- Environment
- Environmental Health and Safety
- Food
- Forestry
- Fuel Cells
- Government Agencies
- Healthcare
- Health Sciences
- Homeland Security
- Industrial Hygiene
- Inventions (research, development and manufacture of)
- Law Enforcement
- Medicine
- Microchip Industry
- Military (operations, equipment, research, etc.)
- Molecular & Nano Technology
- Nuclear Power
- Nutritional Science
- Petrochemical
- Pharmaceutical
- Public Health and Medicine

Quality Control
Refineries
Research & Development
Research Centers
Risk Management
Semiconductor Manufacturers
Space Technology
Special Applications
Specialty Gases
Tobacco
Water: treatment, purification, processing, recycling
Universities

KIN-TEK Customers Served
Aerospace
Analyzer Manufacturers
Environmental Companies
Government Agencies
Military
Nuclear Power
Petrochemicals
Refineries
Research Centers
Semiconductor Manufacturers
Specialty Gases
Universities
Many Others

Airport Security (Dopant Permeation Tubes)
KIN-TEK makes all kinds of disposable and refillable permeation tubes including permeation tubes for dopants of Phosgene, DMMP, Phospine, etc. Dopants are use to validate the operation of trace detection systems that detect narcotics, explosives, and so forth.

As a leading manufacturer, KIN-TEK Trace Source™ permeation tubes and gas standards generators are found in applications of airport security, law enforcement, and the military, among others.

KIN-TEK Trace Source™ dopant permeation tubes are compatible with GE Trace Detection Systems, TSA airport security systems, etc. Dopants include Phosgene, DMMP, Phosphine, Arsine, Chlorine, HCN, etc. Please call on KIN-TEK to help you with your dopant requirements.

Environmental Health and Safety

Process stacks are monitored by on-line Continuous Emissions Monitors (CEMs). Fugitive emissions are monitored by Fence Line Ambient Air Quality Monitoring Systems (FLAAQS). Frequent calibration and daily validation of these monitors and systems are required by EPA regulations.

The toxic chemicals that are being monitored are very reactive and are not stable as cylinder mixtures. Also when using gas cylinders, EPA procedures require large quantities of gas for each validation, which results in high operating costs.

KIN-TEK Solution: Flexstream™ Industrial Standards Generator provides standards that are NIST-traceable through physical measurement using permeation tubes. Because EPA Protocol accepts permeation tube standards, the hazards of using high pressure cylinders is eliminated and the cost is reduced. Plus using KIN-TEK Trace Source™ disposable and refillable permeation tubes improve the accuracy of the analysis.

Industrial Hygiene Applications

H_2S, SO_2, Cl_2, HCl, HF, NH_3, HCN

Additional compounds include Ethylene Oxide, Methyl Iodide, Benzene, Styrene, Acrylonitrile and Isocyanates (among others).

Area monitoring for these (and other) toxic compounds is typically performed by central monitoring systems and/or local sensors. Additionally, personal monitors, sorption tube samplers, and passive badges may be carried by operating personnel to track individual exposure during routine operation. These devices are all expected to read “zero”, or very near zero.

To assure continuous protection for personnel, the performance of these area monitors must be validated periodically as prescribed by OSHA guidelines. As a minimum, continuous monitors need a frequent “bump check” – applying a gas standard to assure that they are operational. All of the listed compounds are reactive, polar compounds. And gas cylinder standards of these compounds have

very poor stability.
KIN-TEK Solution: KIN-TEK's Industrial Gas Standards Generator (Span Pac™ I series), Laboratory Gas Standards Generator (FlexStream™ and 491Flex™), and Portable Gas Standards Generator (Span Chek™ series) are used to generate the required standards at the desired concentrations.

Span Pac™ or 491Flex™ systems are used with local area sensors. FlexStream™ or 491Flex™ instruments are used in the laboratory to test sorption tubes and passive monitoring badges used for personal monitoring. The Span Chek™ instrument is portable and can be used both in and outside of the lab.

Trace Source™ permeation tubes (both disposable and refillable) are used to create standards that are traceable to NIST. Because the standard is created on-site and used immediately, the stability problems inherent with gas cylinder standards are avoided. One Trace Source permeation tube can do hundreds of validations.

Law Enforcement Applications
Example Problem: Ion mobility spectrometers and other highly sensitivity detection systems can be used to locate the source for solvent and noxious or toxic vapors. Finding a significant source of solvent fumes in a residential area might, for example, indicate an illegal drug lab.

KIN-TEK Solution: For many solvents, a KIN-TEK LFH Trace Source™ Refillable Permeation Tube can be used at ambient temperature as a test source to validate instrument operation. For more quantitative work, FlexStream™, 491Flex™ or portable Span Chek™ generators are used to generate the desired concentration(s).

Example Problem: Trace detection of explosive chemicals for airport security requires sensitive equipment that must be checked frequently with dopant standards. Validating instrument operation in the field is crucial. To do this, officers and security personnel need a ready source of test mixture.

KIN-TEK Solution: KIN-TEK Trace Source™ dopant permeation tubes are used to validate instrument operation. KIN-TEK dopant permeation tubes are compatible with GE Trace Detection Systems, TSA airport security systems, etc. Dopants include Phosgene, DMMP, Phosphine, Arsine, Chlorine, HCN, etc.

Military Applications

Example Problem: The growing threat of terrorism has led to major efforts to develop detection sensors and instruments to locate explosives and chemical and biological (CBW) weapons. These devices must detect ppb and ppt concentrations in a complex air matrix that may also be contaminated with a variety of industrial compounds. The Department of Defense and other government researchers need gas standards to evaluate the detectors being developed.

KIN-TEK Solution: Using disposable and/or refillable permeation tubes, KIN-TEK's FlexStream™, 491Flex™ and EcoFlex™ Gas Standards Generators can generate the required concentrations of some common explosives and a wide range of CBW precursors, degradation products and agents in complex matrices.

For many applications, KIN-TEK Trace Source™ dopant permeation tubes can be used directly to validate device operation. Dopants include Phosgene, DMMP, Phosphine, Arsine, Chlorine, HCN, etc.

For CBW, KIN-TEK licenses and trains surety lab personnel to fill and certify permeations tubes, making it possible for them to fill permeation tubes with CBW or other restricted compounds.

Also refer to quality control as related to military applications.

Petrochemical Applications

Example Problem: Impurities in polymerization grade Ethylene and propylene.

Ethylene and propylene producers are primarily faced with product concerns. The most common impurities (see Table 1) are monitored both on-line for process control and in the laboratory for product quality.

Calibration and routine validation of these systems are primary issues. All of these chemicals are reactive and/or polar, and do not store reliably as static mixtures in cylinders. This makes it extremely difficult, if not impossible, to know the accuracy of the standards being dispensed by these cylinders.

Table 1

COS	H_2S	Total Sulfurs	Ethylene
Propylene	Arsine	CO	CO_2
Acetylene	Methanol	Other Oxygenates	H_2O

KIN-TEK Solution: KIN-TEK’s FlexStream™ and 491Flex™ Series Laboratory Standards Generator or Span Pac™ I Series Industrial Standards Generator provide calibration standards for all these compounds, using KIN-TEK’s NIST-traceable Trace Source™ disposable or refillable permeation tubes.

Benefits include:

The standards are generated fresh, eliminating the storage/deterioration problem inherent in gas cyclinders..
KIN-TEK’s permeation tubes improve the accuracy of the analysis.
Our instruments easily generate span gases for span checks or multi-point calibrations.

Quality Control Applications
Example Problem: A wide range of safety equipment such as gas masks, hazmat suits, etc. are used by military and law enforcement personnel for protection from chemical and biological agents. Effective testing of these materials requires test gas mixtures, bothat toxic levels and safe levels. Toxic levels are used to challenge the safety equipment. Safe levels are used to calibrate analyzers which test for breakthrough.

KIN-TEK Solution: KIN-TEK’s FlexStream™ and 491Flex™ gas standards generators are versatile enough to create the required test atmospheres for both toxic and safe levels.

II. Quality Control in Petrochemical and Refinery Applications

Example Problem: Impurities in polymerization grade Ethylene and propylene. Ethylene and propylene producers are primarily faced with product concerns. The most common impurities are:
COS, H_2S, Total Sulfurs, Ethylene, Propylene, Arsine, CO, CO_2, Acetylene, Methanol, Other, Oxygenates, H_2O

These compounds are monitored both on-line for process control and in the laboratory for product quality. Calibration and routine validation of these systems are primary issues. All of these chemicals are reactive and/or polar, and do not store reliably as static mixtures in cylinders. This makes it extremely difficult, if not impossible, to know the accuracy of the standards being dispensed by these cylinders.

Solution: KIN-TEK's FlexStream™ and 491Flex™ Laboratory Standards Generators, and Span Pac™ I Series Industrial Standards Generator provide calibration standards for all these compounds, using KIN-TEK's Trace Source™ disposable and refillable permeation tubes.

Benefits include:

The standards are generated fresh, eliminating the storage/deterioration problem.
KIN-TEK's permeation tubes improve the accuracy of the analysis.
Our Gas Standards Generator instrumentation perform single-point span checks or multi-point calibrations with ease.

Span Chek 8700 Brochure | KIN-TEK

Span Pac H_2O Brochure | KIN-TEK

Span Pac H2O

Span Pac I Brochure | KIN-TEK

EcoFlex™ Permeation System Brochure | KIN-TEK

491Flex Brochure | KIN-TEK

FlexStream: KIN-TEK’s Automated Permeation Tube Brochure | KIN-TEK

Distribute, Represent, or Resell KIN-TEK Products

Jobs/ Employment/ Careers

KIN-TEK Analytical, Inc. is a small growing company that seeks innovative, motivated, and conscientious employees who can contribute to the company’s growth. Employees work directly with management and have an opportunity to see all aspects of the business including research and product development, manufacturing, product quality, marketing, sales, customer support, technology, and finance.

We continually seek new employees to meet our staffing requirements as we take new initiatives to continue our growth. If you are interested in employment with KIN-TEK please send your contact information and current resume for consideration to:

Human Resources Email:

hr@kin-tek.com

We are an equal opportunity employer All qualified applicants will receive consideration for employment without regard to race, creed, religion, color, national or ethnic origin, citizenship, sex, sexual orientation, gender identity and expression, genetic information, veteran status, age or disability status.

Liquid Filled (LFH)

Liquid Filled Permeation Tubes

Generates moderate to high concentration mixtures of low vapor pressure liquids such as acrylonitrile, benzene, methanol and water.

Are usually filled by KIN-TEK before shipment but may be filled by the customer (with appropriate safety measures in place) for certain components (contact the Factory).

Tube dimensions: 1¾ inch diameter by 6 inch height plus approx. 2 inch height of protruding tubing.