

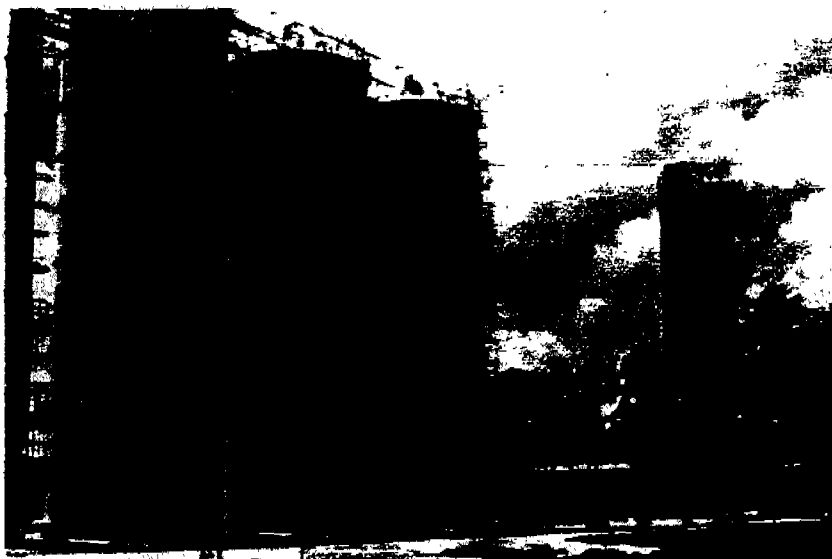


Microprocessor-based ambient air monitoring system provides rapid detection of VCM leaks

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New Solutions to Plant Problems



View of CertainTeed's Sulphur, Louisiana plant

Ambient air sampling building



CP Staff photos

Problem: At the Sulphur, Louisiana plant of the CertainTeed Corporation, the raw material is vinyl chloride monomer (VCM); the product, polyvinyl chloride (PVC). Emissions into the atmosphere must be eliminated in order to comply with federal air pollution control regulations and to avoid loss of product.

Until September 1977, when a new system was installed, an infrared analyzer was used for monitoring the air leaving the VCM process. Inaccuracies were encountered due to drift and temperature sensitivity of the analyzer, and there were maintenance problems. An analysis required three minutes, so that if a VCM leak occurred, it was at least three minutes old before an operator could take the proper measures to correct the situation and stop the air pollution and loss of product.

Solution: An ambient air monitoring system was installed to replace the infrared analyzer. It consists of a sampling system, a process microcomputer (PMC) which controls the continuous operation of two chromatographs, each with a flame ionization detector (FID). The detector signals are sent back to the microcomputer for processing. Communication is done through two typewriters with printout. One is in the ambient air sampling building, the other in the technical supervisor's office. Ambient air samples are taken at 30 points, with 15 pumped to each of the two

Safety new literature

Safety supply catalog features a wide variety of products to assist in meeting OSHA regulations. Included are drench showers, goggles, face shields, protective clothing, hearing protection, burn stations, fire extinguishers and more. All products in the 64-pg catalog are described and illustrated in full detail. Safety supply cat — Interex Corp.

Circle 517 opposite last page

Garments of Tyvek spunbonded olefin are fully described in 12-pg bulletin. Workers are protected in a variety of hazardous or dirty jobs involving such materials as asbestos, PCBs, pesticides and lead dust. Barrier properties, liquid hold-out, chemical protection, toughness and durability, breathability/comfort and cost/performance are all addressed in the illustrated brochure. Tyvek bro — Du Pont Co.

Circle 518 opposite last page

Plant identification products, including conduct and voltage markers, pipe marking products, aisle marking dots and tapes, visual barricading products,

complete systems for numbering and lettering, sign-making components, interior and exterior graphics systems, vehicle placards and safety signs are described in a 118-pg catalog. Catalog S-4 — W H Brady Co.

Circle 519 opposite last page.



Over 100 disposable garments, including head gear, smocks, aprons, pants, shirts, coveralls, jumpsuits, shoe covers and other accessories, are discussed in catalog. Made of Tyvek, these garments are designed to meet most clean room and health hazard requirements and are strong enough to reuse many times. Disposable clothing cat — Melco, Inc.

Circle 520 opposite last page.

Digital audible dosimeter with a range of 0-9999 mR is described in a bulletin. The instrument had LCD readout and presettable integrated alarms from 10-9999 mR and rate alarms from 100-9000 mR/hr. All alarms are inside the device so that they are inaccessible to the user after being preset by the radiation safety personnel. SuperDAD bul 1888 — Dosimeter Corporation of America.

Circle 521 opposite last page

Protective footwear and clothing catalog analyzes each boot and protective suit by the way they perform at specific hazardous job sites. Line has been organized so that customer can select products by materials, construction and price. Protective clothing cat — Uniroyal, Inc.

Circle 522 opposite last page

For more information, circle corresponding numbers on Reader Service Card opposite back cover

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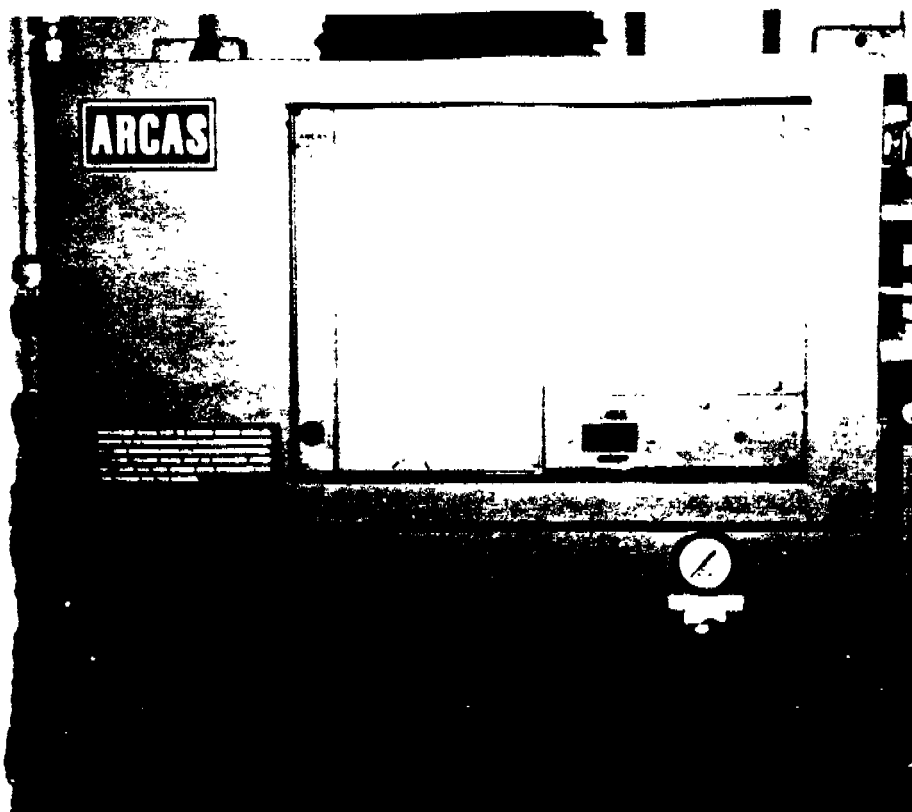
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GENC 005691



Chromatographic detector housing in ambient air sampling building

analyzers. A 16th stream to each is used for calibration, done once each shift, or three times every 24 hours.

Ninety-six analyses are made in 24 hours for each sampling point, each requiring 60 seconds, with continuous typewriter printouts showing VCM in parts per million and location and exact time of each sample. Gas chromatography is the method recognized by OSHA for monitoring levels of vinyl chloride and other hydrocarbons. The tolerance is a maximum of 10 ppm VCM from any control device. An alarm registers immediately on the printouts if VCM reaches 5 ppm at any sampling point, indicating a leak; the alarm continues to register until the VCM level is reduced.

The PMC controls the timing of sample taking and holds analyses in memory until 12:01 AM each morning, then takes about 20 minutes to print out all readings and averages in a 24-hour report. Appropriate programming can provide averages for any desired time periods, e.g., by the

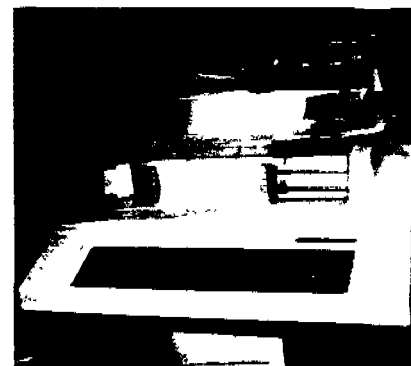
hour or shift. Data can be transferred to a minicomputer with greater storage capacity.

Results: The ambient air monitoring system has functioned smoothly and there have been no maintenance problems to date. The alarm feature is considered one of the greatest advantages over the former system of analysis. VCM leaks, which occur infrequently, are rapidly detected and stopped, saving an estimated 100 manhours per month, minimizing product losses due to leaks, and complying with federal control regulations for VCM content of air emissions. ■

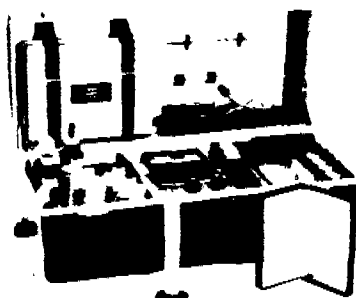
Information on the Arcas Model 505 Analyzer and Model 2000 Process Micro Computer is given in Bulletins 300-0179 and PMC-0578 from Foxboro Analytical, a division of The Foxboro Co., Arcas Chromatography Center, 10707 Haddington St., Houston, TX 77043.

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Air sampling point on an overhead line



Continuous air analysis printout in supervisor's office



Pollution detection lab monitors 300 substances

Hazardous materials detection kit is a complete, portable laboratory which provides a rapid means for determining the extent and severity of toxic substance contamination. The kit uses 15 general test methods to monitor over 300 hazardous materials. Portable carrying case contains a spectrophotometer, pH meter, conductivity meter and all required reagents and apparatus. Tests are

rapid and easy to run. Many use premeasured reagents and precalibrated meter scales producing quick results which allow prompt remedial action.

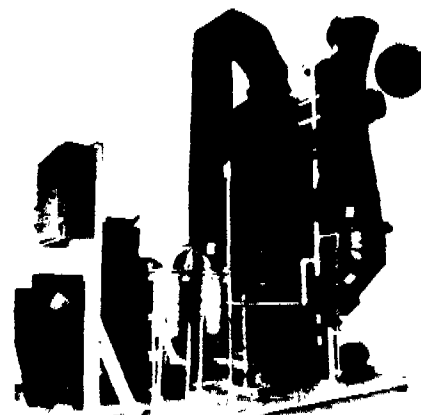
(HMDK portable laboratory — Hach Chemical Co., Box 389, Loveland, CO 80537.)

Circle 525 opposite last page

Packaged scrubber system mounted on skid

Complete "packaged" scrubber system is pre-assembled and mounted on a skid for in-plant installation. System consists of a scrubber and separator vessel in addition to a liquid storage tank, recycling pump, piping, level controls, pressure blower, pressure cartridge filter, flue dampers and annunciator panel. All electrical and mechanical engineering is completed before shipping.

The unit meets all OSHA and EPA compliance standards. Energy requirements are minimized through the



selection of high-efficiency fan and pump systems. System can treat 6000 acfm and lower gas flow rates with a variable throat control. Skid mounted units can also be designed with flow rates up to 70,000 cfm.

(Packaged scrubber system — Air Pollution Control Equipment Div., Croll-Reynolds Co., Inc., 751 Central Ave., Westfield, NJ 07091.)

Circle 526 opposite last page.

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