

# DID YOU KNOW?

## 6 ESSENTIALS OF MEETING NFPA 86

selecting a solvent vapor monitoring system that meets the requirements of NFPA 86 Codes

**1** **SAMPLE DELIVERY SYSTEM** • Process applications should have active sample draw systems to continuously deliver a sample to the solvent vapor monitor. Accurate process sampling depends on drawing a sample from the oven exhaust duct, and delivering it to the solvent vapor analyzer, as quickly as possible without losing anything. As stated in Annex E of NFPA 86, "the best sensor site is on or adjacent to the oven zone's exhaust ductwork so that the sample line is kept short".



The PrevEx Flammability Analyzer collects the sample using an aspirator, driven by compressed air. There is no pump or blower; instead microprocessor control guarantees constant sample flow and pressure through the train, assuring you of the highest level of accuracy.

**2** **SPEED OF RESPONSE** • The caution note found in NFPA 86 warns operators of the need for fast response, stating as little as 5 seconds might be required. System response time is the sum of the sample delivery time plus the sensor response time, which further emphasizes the importance of short sample delivery lines and no sequential sampling.



When it comes to giving you early warning no other design even comes close to the PrevEx's less than 1-second cell response time. This is due to the PrevEx's direct duct-mount design. This radically reduces sample delivery time, while ultimately accelerating response time.

**3** **ACCURATE CALIBRATION AND RESPONSE** • NFPA 86 requires calibration to be valid for the application and solvents used, "if a variety of solvents are used, cross calibrations must be accurate or the sensor must be recalibrated whenever solvents are changed. Calibrations must be made using known concentrations of test gas mixtures". Recalibration calls for zero and span checks using known concentrations of test gas mixtures.



Only the PrevEx Flammability Analyzer gives consistent and reliable readings when faced with multiple or changing solvent concentrations. This is due to the powerful universal calibration feature, made possible through the it's sensing flame technology.

to learn more call 973.575.9114 or visit [www.controlinstruments.com](http://www.controlinstruments.com)

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**4** **AVOIDANCE OF CONDENSATION** • Condensation can be avoided by heating the entire sample line and sensor assembly above the condensation temperature of the sample. NFPA 86 states, “the sensor and sample delivery system shall be maintained at a temperature that prevents condensation”. It is very important to consider not only solvents, but all constituents of the sample, including resins, plasticizers, and other compounds present in the sample.



The PrevEx has a corrosion resistant, heated sample train through which the sample is delivered. The heat eliminates that condensation and withstands corrosive elements, leaving an accurate representation of the process.

**5** **FAILSAFE MALFUNCTION LOGIC** • According to NFPA, “alarms shall be provided to indicate any sample, flow, circuit or controller power failures”. The best analyzer design should be failsafe: it will provide malfunction alarm for any and all faults. For greatest safety, the malfunction alarms should shut down the process.



The inherent design of the PrevEx's sensing flame technology is that the flame must always be on and the system working properly or an alarm is given. This leaves no problem undetected, a malfunction relay is automatically tripped and the operator is notified immediately of a status change.

**6** **MAINTENANCE** • The system should be designed to provide the least amount of downtime, including routine calibration and maintenance of the sampling system and sensor. Maintenance time depends on the sensor type and sampling system. Insufficiently heated sampling systems will result in condensation, clogging and excessive maintenance.



The PrevEx's all-inclusive design is easily operated and maintained. The front panel includes a complete set of status indicators and an eight-character alphanumeric LCD display. Using just two push buttons, all calibration, programming and diagnostic routines can be accessed, in addition to two external control inputs.

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