

Equipment needed of Air Monitoring for Emergency Response (AMFER) course

The following table lists the hands-on activities performed during the AMFER course, the minimum equipment needed to conduct the activity, the equipment used by the E RTP course, and additional information. It does not list the chemicals or other supplies (gas bags, buckets, containers) that are used. The exercise set up is provided in the instructor guides, but that can be adjusted to meet local needs (e.g., using different chemicals); as long as the student performance objectives are met.

All references to specific manufacturers and products do not imply endorsement by the U.S. Environmental Protection Agency (EPA) or its contractors.

Exercise	Generic Instruments*	ERTP Instrument	Minimum instrument Number*	Comment
Multi-Gas Monitors	Multi-gas monitor – a four gas monitor with LEL, oxygen, and 2 toxics sensors (CO and H ₂ S are common varieties)	RAE Systems MultiRAE Plus – LEL/Oxygen/VOC/CO/H ₂ S	1 instrument/2 students	For the exercise, a basic four gas monitor is all that is needed. The MultiRAE Plus is used because it is the main multi-gas monitor that EPA uses. Other toxic sensors can be used, if a test atmosphere and an interfering gas are used.
Photoionization and Flame Ionization Detectors	A photoionization detector (PID) and a flame ionization detector (FID); at a minimum, a PID	Thermo TVA-1000B combination PID/FID	1 instrument/2 students	The purpose of the exercise is to compare and contrast the PID and FID. Also, relative response effects are shown. If only one of the detectors is used (such as just a PID), only relative response effects can be illustrated. The TVA-1000 has both detectors.
Detector Tubes	Detector tubes and pump; Draeger Chip Measurement System (CMS)	Draeger Accuro detector tubes and pump; Draeger CMS	1 detector tube pump/2 students preferred but fewer pumps could be used if each student gets the opportunity to use at least one detector	

Exercise	Generic Instruments*	ERTP Instrument	Minimum instrument Number*	Comment
			tube; 2 CMS per class; this is done because 2 tests are done during exercise and having 2 units saves time (tests are time consuming)	
Field Exercise	All the above equipment plus: pH paper; chips/detector tubes for specific chemicals	All the above plus: pH paper; chips/detector tubes for specific chemicals; MultiRAE with HCN sensor	Each team should have: multi-gas monitor; PID/FID; detector tube pump; CMS (if more than one team per class, the CMS can be shared)	HCN sensor instrument available because one of the scenarios is an electroplating facility. The normal ERTP class has 3 teams operating at the same time.

*If you have questions whether the type and number of equipment you have available are adequate, please contact the External Provider Coordinator, Bruce Potoka, at 513-569-7038