

Thermo Fisher Mini Instrument 900 STS 802 SIMULATOR

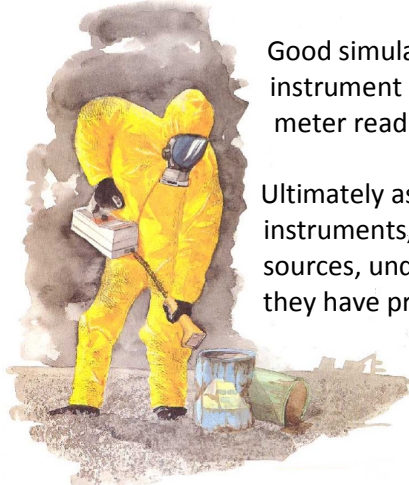
STS specialises in the conversion of standard instruments for training purposes. The Thermo Fisher Mini Instrument 900 is a popular instrument designed to replicate the response and characteristic of the real Mini 900.



Why Use STS Simulators for Training?

- STS Simulators are able to replicate the characteristics of contamination from radioactive sources including cross contamination where clothing, skin or environmental contamination may occur; this is not possible to achieve with a real source scenario without undue exposure to the trainee.
- Limiting the exposure of the trainer – if real sources are used, every training session poses an additional cumulative dose to the trainer, while the trainee receives only the dose resulting from the session attended.
- Training with real radiation sources requires a considerable amount of paperwork to move sources, even very small ones, from secure areas to “open field” exercise areas taking time which could be more productively used.

STS simulators solve these problems – the trainer has no cumulative exposure from each training session and the trainee can make serious mistakes without any hazard to anyone.



Good simulators allow training to progress from “no knowledge” to a full understanding of instrument controls, the relationship of source position, Instrument position and meter reading.

Ultimately as simulators cannot recreate the 1:1 million dynamic range of modern survey instruments, trainees will need to make measurements with real instruments and sources, under supervision, but their performance will be much more confident if they have progressed to that point via good simulation training.



Technology

This simulator uses the STS 800 Series technology. This technology consists of three parts, simulated contamination a modified instrument and a simulated probe to detect it. The simulated contamination is a safe liquid - STS LS1 - which can be applied to clothing, equipment, plant and surfaces where it slowly evaporates. Because the gas is very dense, the gas cloud stays near to the surface.

Operation

This simulation system is used to train staff in monitoring general radioactive contamination, or, in specific sites, Alpha contamination.

The gas cloud stays within about 2 cm of the surface, and within this range, the signal will range from 2000cps at almost contact to background at 2 cm. To force the trainee to develop good monitoring technique, the system is regulated so that if the monitor is passed too quickly over the surface or is too far away, little gas is captured. Hence the trainee learns to monitor with the probe close to the surface and travelling slowly.

The period when the LS1 is generating sufficient gas to enable the simulation to operate is dependant on length of time, temperature and roughness of the surface. For example, on a cold concrete floor, the LS1 may remain for 8 hours, while on a warm, rough cloth sleeve the liquid will be have evaporated in less than 1 hour.


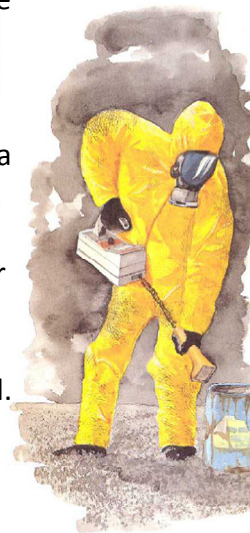
In any case, the source will have completely evaporated in 24 hours, allowing a new session to be undertaken without a 'hangover' from the previous training session.

Because the liquid is sticky it is easy to demonstrate transfer of contamination – brushing a hand over a contaminated surface will result in the hand becoming contaminated and then everything touched is also likely become contaminated. Decontamination by wiping or washing will allow clean-up procedures to be demonstrated.

For some applications a solid contaminant may be required and STS produce the SS4 powder simulant for this purpose.

STS produce a wide range of simulated instruments from many manufacturers. The range includes the 900 series Gamma simulators which use a microwave simulation source, the 800 series on which the mini instrument 900 is based, a plumes aerial fallout simulator and CW simulators based on instruments such as CAM.


We welcome the opportunity to discuss individual requirements and tailored solutions. For more information or to find your nearest distributor please visit our web site at www.safetrainingsystems.com



RADIOACTIVE

How realistic is your safety training?

Radioactive materials are now part of modern life in industry, research laboratories, nuclear fuel processors, power stations and hospitals. While their benefits are well established, their monitoring and control present special problems. One of these is the difficulty in training staff to detect and control contamination, because in order to achieve this, both trainers and trainees are necessarily exposed to it. This is a clear conflict with generally recognised safety principles, including ALARA. To overcome this, Safe Training Systems have developed a realistic simulation system, the STS 800 series of Ionising Radiation Simulators.



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