

# Mercury Risk Reduced

## FIRE & RESCUE SERVICE DEPLOY ABLE JEROME FOR MERCURY SPILLAGE DETECTION

Strathclyde Fire & Rescue Service, acting on the advice of one of its Fire Board's constituent local authorities scientific advisory services namely, Glasgow Scientific Services, has recently purchased ABLE's Mercury Detection System for its technical support teams and mobile technical support laboratory.

Mercury, also called quicksilver or hydrargyrum, is a chemical element with the symbol Hg and atomic number 80. Mercury is one of only six elements that are liquid at or near room temperature and pressure. It is mostly obtained by reduction from the mineral cinnabar.

Mercury is used in thermometers, barometers, manometers, sphygmomanometers, float valves, and other scientific apparatus. It is also used in a number of other ways in scientific research applications. It is harmless when in an insoluble form, such as mercuric sulphide, but mercury poisoning can result from exposure to soluble forms, inhalation of mercury vapour, or eating fish contaminated with mercury. Toxic effects include damage to the brain, kidney, and lungs. Mercury poisoning can result in several diseases, including acrodynia (pink disease), Hunter-Russell syndrome, and Minamata disease. Symptoms typically include sensory impairment (vision, hearing, and speech), disturbed sensation and a lack of coordination. The type and degree of symptoms exhibited depend upon the individual toxin, the dose, and the method and duration of exposure.

The mercury detection system will be used by the Fire and Rescue Services to verify the presence and level of mercury vapour during incidents involving mercury spillage, to ascertain whether the environment is safe to enter. This could include spillages from simple household thermometers with 0.2mg through barometers with 50-100mg, up to unlimited quantities in industrial gauging.

The previous method used to verify potential mercury inhalation hazards required testing in a technical support mobile laboratory. This method can take up to 2-3 hours to verify any hazard before the situation can be dealt with. With the ABLE Jerome Mercury Detection System, the verification time can be cut down by 50-75%. This will allow the fire and rescue service to ascertain and deal with any potential situations rapidly, freeing up their time for any other emergencies without delay, if the situation is non toxic.

Designed to provide a lower detection limit of  $0.5\mu\text{g}/\text{m}^3$ , the new generation of Able Instruments' Jerome portable mercury vapour analysers is perfectly suited to make fast, accurate measurements in accordance with the Health Protection Agency's public health guidelines for air quality which recommend exposure limits of  $1\mu\text{g}/\text{m}^3$ .

The Jerome combines the proven, inherently stable, highly specific and reliable gold film technology with simple one button operation and these attributes have lead to a strong endorsement of the instrument by emergency services carrying out detection inspection monitoring. The instrument may be operated in survey mode for tracing sources of mercury hazard or in analytical mode for measurement accuracy of  $\pm 10\%$  and a repeatability of 15% RSD @  $1\mu\text{g}/\text{m}^3$ .



For further information regarding this application story please contact ABLE on Tel: +44 (0)118 9311188 or e-mail [info@able.co.uk](mailto:info@able.co.uk).

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