**Workplace monitors for dust and gases**

**Air sampling accessories**

**Air Sampling Heads**

Total Inhalable

Inhalable sample heads collect a particle size of 100 micron and smaller; i.e. all available inhalable dust.  All the sampling heads are designed for use with a controlled rate of air provided via a personal air sampling pump. Sampling media (filters) are placed inside the heads directly or using cassettes. The filter will be weighed before sampling and then again afterwards to gravimetrically determine the amount of dust collected.

Respirable Fraction

Respirable fraction sampling heads are specifically designed to separate out the smaller dust fractions which travel further into the human airways and are generally more harmful. The collection efficiency curve meets the ACGIH/ISO/CEN standards for a respirable curve with a median 50% cut point of 4micron.  The cyclones work by physical separation of particles and the flow of air through the cyclone must be controlled accurately by the personal sampling pump for the cyclones to work efficiently.

Other Sampling Heads

We also supply other sampling heads designed for specific applications, for example; a Swinnex head for Rosin/Welding fumes or a filter head for lead sampling.

**Asbestos sampling**

Asbestos is a group of naturally occurring fibrous silicate minerals which have been used widely in construction and industry because of its flexibility, strength, chemical resistance, insulation properties and non-combustibility. Asbestos releases fibres into the air if it becomes damaged or disturbed and asbestos fibre inhalation is associated with lung diseases, i.e., asbestosis, mesothelioma and lung cancer.

Airborne asbestos fibres are sampled by drawing a measured volume of air through a membrane filter. This is then mounted onto a microscope slide and rendered transparent with solvents, generally acetone/glycerol triacetate. Fibres on a measured area of filter are counted using phase contrast microscopy (PCM) and the number concentration of fibres in the air is calculated.

Casella offers specific sampling accessories for the analysis of asbestos fibres; An open faced filter holder fitted with an electrically conducting cylindrical cowl is required along with MCE filters with a printed grid. MCE filters (a mixture of cellulose acetate and cellulose nitrate) are recommended for asbestos sampling as they are readily rendered transparent for fibre counting. Pre-loaded asbestos cassettes are also available in pore sizes of 0.8µm and 0.45µm for ease of use.

**Sorbent Tubes**

These are sealed glass tubes, with generally 2 sections of adsorbent material. They are used for monitoring levels of organic vapours and gases. Both ends of the tube are broken off and air is drawn through the sampling tube and the vapour or gas that’s being monitored is adsorbed onto the material in the tube. After sampling, the ends of the tube are capped and sent to a laboratory where the material is desorbed from the tube, either chemically or thermally, and analysed usually by a gas chromatograph.

Different types of adsorbent material are used; the most common being charcoal and silica gel. Please refer to your MDHS, NIOSH, OSHA or other standard method to find out which type of tube your need.

**Charcoal Tubes**

This is the standard sorbent tube generally used for organic vapours. They are suitable for most aromatic hydrocarbons and alcohols but please check your standardised method.

**Silica Tubes**

This is another commonly used sorbent tube and is suitable for polar hydrocarbons, methanol, amines, inorganic acids and low molecular weight mercaptans (thiols). Some of the tubes in the range are pre-treated (e.g. with 2,4-dinitrophenylhydrazine) for sampling of specific chemical hazards

**General Accessories**

**Impingers and Bubblers**

Impingers are glass tubes designed to collect airborne contaminants by bubbling the sampled air though an adsorbing liquid. This is then analysed to determine contaminant level. Please consult your standardised method.

**Tedlar Bags**

These are grab sampling bags for sampling gases and vapours. Made from chemically inert Tedlar, they are re-usable if purged with nitrogen and have either stainless steel or polypropylene fittings.

**Low Flow Adaptor**

A low flow adaptor enables a high flow sampling pump to operate at the lower flow rates required by some standardised methods (2-200ml per min).

**Field Rotameters**

We have a range of flow meters to calibrate your personal sampling pump in the field. It is recommended that all pumps are calibrated pre and post sample.

**Tygon Tubing**

Tygon E-3603 tubing is ideal for use with personal sampling pumps. It has outstanding chemical resistance and slips easily over fittings, gripping securely.

**Glass Fibre Filters (GFA)**

These low cost filters are commonly referred to as depth filters. They are ideal for general gravimetric air sampling and analysis. Suitable when no other analysis than weighing is required. Binder and additive free. Available unweighed and pre-weighed.

**Mixed Cellulose Ester (MCE)**

Developed from a mixture of cellulose acetate and cellulose nitrate, MCE filters are suitable for air monitoring where further analysis other than gravimetric is required. They are available in a range of pore sizes. They are also available in gridded versions for fibre counting.

**Poly Vinyl Chloride (PVC)**

High quality filters for measuring dust, silica and chromium. They have a low tare weight so suitable for lower sample levels and have gravimetric stability. Low ash levels means interference free silica determinations.

**PolytetraFluoroEthylene (PTFE)**

High quality, chemically resistant filters suitable for aggressive environments. Suitable for highly sensitive, interference free determinations. Low tare weight means gravimetric stability and suitable for use with lower sample levels.

**Polycarbonate**

These filters have a smooth glass-like surface with precise pore size and distribution for specific filtration and separation. Available in a range of pore sizes. They are optically transparent and non-staining which means they are ideal for sample observations.

**Quartz**

Quartz filters are heat treated for improved purity allowing trace level analysis. They are heat resistant and suitable for use in stacks or for diesel emissions and are acid resistant.. They have a high flow rate. Binder and additive free.

**Silver**

Made from high purity silver, these filters can be cleaned and re-used. They have a smooth surface for particle capture and easy observation. They are available in different pore sizes.