

CPAS

Occupational Hygiene professionals are increasingly looking for convenient and light-weight equipment to use in personal aerosol sampling surveys. The availability of the Compact Personal Aerosol Sampler (CPAS) with weight of only 86g addresses this need for convenience and means that samplers can be fitted to employees in a discreet fashion for extended periods of time without disturbing their normal working day.

The CPAS is designed to assess inhalable dust exposure in the workplace over an 8 hour shift, according to HSE's standard MDSH 14/4. It samples inhalable dust levels for comparison to short term (15 minute) and long term (8 hour time-weighted average) Workplace Exposure Limits (WELs). CPAS provides a convenient low-weight alternative to the standard IOM (Institute of Occupational Medicine) sampler without the 'catch' hazard of associated tubing or the need for a separate waist mounted pump and battery.



Key features of CPAS

Compact ergonomic design:

- Compact design integrates sampling head, filter cartridge and pump in single combined sampling unit.
- Complete unit mounts on lapel directly in breathing zone with clip or lanyard.
- No tubing required, thus avoids snag hazards.
- Avoids requirement for separate external pump/battery.

Compliant Sampling capability

- Personal sampling of inhalable dust at 2l/min according to HSE's requirements (MDSH 14/4).
- Convenient, unobtrusive and light-weight alternative to the traditional IOM sampler for the personal sampling of inhalable dust.
- Log of key sampling parameters - start and stop time; ambient temperature and RH; differential pressure at vent (related to volumetric flow); battery voltage; and PWM (a measure of the drive voltage applied to the CPAS air mover).



REQUIREMENT	CPAS SPECIFICATION
Performance in sampling	Inhalable dust is sampled according to HSE's MDSH 14/4
Total weight	86g
Size	60x44x44mm if cartridge is fitted
Sample flow rate	2 l/min +/- 2.5% with inbuilt-auto-adjustment
Flow rate calibration	With external flow meter. FIN adaptor also required for high pressure drop flow meters (please contact Arosa)
Sampling period	8 hours between recharge of removable Li ion battery
Filter media	Removable Stainless Steel cartridge with 37mm HEPA suitable for gravimetric analysis or particulate content analysis

Industries with Workplace personal sampling requirements for inhalable dust

- Chemical industry including tyre, titanium dioxide and carbon black manufacture.
- Metals industry, including general manufacturing, automotive assembly, ferrous and non-ferrous foundries, primary and secondary steel making.
- Minerals including quarries, brick and sand works, and aggregate plant.
- Food - including bakeries, flour mills and cereals.
- Furniture and kitchen unit manufacture (with new lower WELs for Hardwoods).
- Industries using metal welding such as construction and general manufacturing (with new WELs for hexavalent chrome and manganese, and where the sampling head needs to be located within the welding visor or Respirable Protection Equipment (RPE)).
- Transport including rail and road.

Arosa's license with Ploughshare Innovation Ltd. for a range of aerosol monitors

Arosa Instruments Ltd has a license agreement from Ploughshare Innovations Ltd to intellectual property generated through a collaboration between Dstl, a part of the UK Ministry of Defence, and the University of Hertfordshire. This licence grants Arosa the rights to develop and manufacture a range of revolutionary aerosol instruments for **workplace exposure assessments** and **air quality studies** using DSTL's patented low flow impedance sampling technology.

- **The CPAS combines a sampling head, sample cartridge and airflow management system within an integrated package which is both light-weight and convenient to wear.**
- **In the CPAM personal monitor, this capability is extended by addition of a real-time aerosol measurement sensor to allow a temporal record of respirable dust mass concentrations (four separate particle sizes including PM2.5) over periods up to 8 hours.**