

Dust Explosion Demonstrator Apparatus

Even commonplace materials when dispersed as a dust cloud will explode if exposed to an ignition source. Such dust explosions can cause, injury to personnel, plant damage and lost production. Personnel awareness of the hazards from dust explosions is essential in reducing the risk. This apparatus is highly effective in achieving an understanding of the dangers involved.



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EXPLOSION DEMONSTRATION

The Chilworth Technology Portable Explosion demonstrator allows employers and teachers alike to simply demonstrate to employees, students and fellow work-mates the dangers that even the most minute quantities of some powders can pose when exposed to or in the vicinity of an ignition source.

This demonstrator apparatus is based on our A/B Classification rig. The A/B test is employed by our process safety laboratories to determine whether a powder will ignite when dispersed in the form of a dust cloud. The test generates a small enclosed dust cloud which is exposed to a continuous arc discharge situated within a vertical tube. Should the powder ignite it is classed as group A (flammable), a potential dust explosion hazard. Should it fail to ignite, this does not mean that the material is non-flammable. Further testing would be required as per the appropriate test standard. Chilworth Technology also manufactures the instrument, known as the Godbert Greenwald Furnace apparatus, required to conduct these further tests to all the relevant international standards.

THE DEMONSTRATOR APPARATUS

- A powder dispersion unit with acrylic "Hartmann" tube. The powder unit forms an integral part of the storage case and being lightweight and compact can easily be carried from room to room. A polycarbonate shield is available as an extra.
- An Internal 8.5kV high voltage unit provides the power for the continuous arc discharge.
- A hand held remote control unit allows operation of both the arc discharge (spark) and the air reservoir for dust dispersion.
- A foot pump and pressure gauge for supplying the correct air pressure to the internal air reservoir. The foot pump is ideal for demonstration purposes as it can be used even in a lecture hall.
- A box of bursting discs for providing containment up until explosion.
- Robust carry case is provided to store the whole apparatus.

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Godbert Greenwald Furnace Apparatus

THE BENEFITS

The Explosion Demonstrator Apparatus :-

- Easy to operate
- Excellent for lecture hall/employee demonstration
- Dramatic visual and audio effect from powder ignition
- Robust and strong storage case
- Portable and lightweight
- Low cost

Testing to GLP Standard



Consultancy



Training



CHILWORTH SERVICES IN PROCESS SAFETY

As well as equipment supply we also offer a range of testing and consultancy services to the processing industry, covering:-

- Dust/Gas/Vapour Explosion
- Electrostatic Hazards
- Hazardous Area Classification
- Chemical Reaction Hazards
- Chemical Process Optimisation
- Regulatory Testing (NONS, SDS, CHIP, CPL, UN)
- ATEX Audits
- Major Hazards (Seveso II / COMAH)
- HAZOP
- Incident Investigation
- Expert Witness
- Training

For further information and a comprehensive list of the services available, please contact one of our offices detailed below.

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