

DUPONT™

Tyvek®

**MINIMIZING
EXPOSURE TO
HAZARDS
WITH THE RIGHT
PROTECTIVE
EQUIPMENT:**

Hazardous Dusts





When working in hazardous environments choosing the right PPE protection is essential for the safety of the workers. DuPont offers a variety of different solutions to tackle different environments. More specifically, Tyvek® coveralls can provide durable, comfortable, and robust protection against hazardous dusts including asbestos, crystalline silica dust, and Polychlorinated biphenyls (PCB) dust.

What is Asbestos



Asbestos is the common name for several naturally occurring fibrous silicate minerals. Asbestos fibres are very heat resistant and strong and were used for many years in thermal insulating materials such as laggings and coatings, floor tiles, roofing, asbestos cement products, electrical insulating materials as well as vehicle clutch and brake linings.

Since asbestos is a very friable material, microscopic fibres (between 0.1 and 10 μ in size) can release into the air in smaller or larger quantities. Inhalation of asbestos fibres can have serious health effects, including asbestosis, lung cancer and mesothelioma.

Asbestos is a material with numerous qualities which was used on a massive scale before being shown to be highly toxic. Prohibited for use across Europe since 2005, it can still be found in many buildings and machines.

What is Crystalline Silica Dust

Crystalline silica is a basic ingredient of the Earth's crust, found in many naturally occurring and man-made materials, including rock, soil, sand, concrete and brick. Quartz is the most common form of crystalline silica. Cristobalite and tridymite are two others.

What are the risks?

When workers crush, cut, chip, drill or grind objects containing crystalline, the mineral may be broken down into small particles silica (with the dust particles being between 0.1 and 10 μ in size), becoming a dry particulate inhalation hazard. Crystalline silica dust exposure is associated with foundry work, sandblasting, hydraulic fracturing and many other jobs.

The Occupational Safety and Health Administration (OSHA) estimates that 2 million workers are exposed to silica dust in the United States. Crystalline silica dust has been recognized as a serious health hazard to industrial workers for decades. Workers who are exposed to crystalline silica dust are at increased risk of developing serious health problems, including silicosis and other respiratory diseases.



What is Polychlorinated Biphenyls (PCB) Dust

PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms. They belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until manufacturing was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment, plasticizers in paints, plastics and rubber products, pigments, dyes and carbonless copy paper, floor finishes, etc.

PCBs have been demonstrated to cause a variety of adverse health effects. Studies in humans support evidence for potential carcinogenic and non-carcinogenic effects of PCBs. PCBs do not readily break down once in the environment. They can remain for long periods cycling between air, water, and soil*. Workers get exposed to PCB dust when they demolish industrial and residential buildings containing PCBs.

* EPA, [Learn about Polychlorinated Biphenyls \(PCBs\)](#)

Controlling the spread of hazardous dust particles

With all workplace hazards, [EU](#) expects employers to apply the hierarchy of exposure controls to protect workers. Employers should eliminate hazards or substitute lower-hazard alternatives first. Next, engineering solutions should be implemented, followed by administrative controls. If these controls have been applied and residual risk remains, then the use of personal protective equipment.

Choosing appropriate protective clothing



With DuPont™ Tyvek® protective garments, protection is built into the fabric itself. The barrier extends throughout the garment and helps provide excellent protection against particles in the 1-2 μm range or larger. Tyvek® garment options include coveralls with or without respirator-fit hoods, lab coats and aprons, as well as a variety of accessories, including hoods, sleeves and skid-resistant shoe and boot covers. Tyvek® coveralls feature a comfort-fit design that helps aids worker mobility and makes the garments easier to put on and take off.

Choosing appropriate protective clothing

Protective coveralls must provide a high barrier against air-borne particles (Category III, Type 5 & Type 4). They have to meet the following general requirements:

- High particle barrier (material, seams)
- Smooth surface to prevent particles from adhering to the garment
- Tight fit at arm and leg openings (elasticated cuffs and ankles)
- Compatible with additional PPE (masks, goggles, gloves)
- Comfortable to wear, high freedom of movement





Durable and robust protection against fine particles and fibres

Protective coveralls made of DuPont™ Tyvek® fabric such as Tyvek® 600 Plus and Tyvek® 500 Xpert provide an excellent barrier against airborne particles (Type 5).

Thanks to the unique non-woven structure of Tyvek® fabric, which forms a durable barrier against airborne particles and many water-based inorganic chemicals, Tyvek® garments continue to protect even if the outer layers become abraded in places. With MPF, the protective outer layer is easily damaged by abrasion, whereas the more open structure of SMS allows more particles to penetrate the garment.

Beyond its high abrasion and tear resistance, Tyvek® fabric is also lightweight and soft, as well as permeable to both air and water vapour, helping to provide a high level of wear comfort. Thanks to its smooth surface and antistatic treatment, Tyvek® fabric helps prevent particles from adhering to the coverall.

Tyvek® 600 Plus

Hooded chemical protection suit, Category III, Type 4-B, 5-B and 6-B.

- stitched and over-taped seams for high particle barrier performance elasticated face, wrists and ankles for tight fit
- elastic thumb loops prevent sleeves from riding up when working overhead
- self-adhesive chin flap; hood optimized for tight fit around respirator masks
- Tyvek® zipper with self-adhesive flap for enhanced protection
- also available with integrated socks to wear in your own boots/shoes; to help prevent particles from entering the garment through leg openings complies with the new French decree on PPE for workers exposed to asbestos fibres

DuPont™ Tyvek® 600 Plus (sizes XS to 7X).
Inward Leakage*: 0.4%

Options: DuPont™ Tyvek® 600 Plus with socks
(sizes XS to 7X).
Inward Leakage*: 0.2%

*Based on the average of 10 suits, 3 activities, 3 probes



Category III



TYPE 4-B



TYPE 5-B



TYPE 6-B



EN 1149-5

Tyvek® 500 Xpert

Hooded chemical protection suit, Category III, Type 5-B and 6-B.

- design and construction provides high protection against particles
- sleeve design prevents sleeves from riding up when working overhead
- optimised 3-piece hood design for tight fit around the face
- elasticated face, wrists and ankles for tight fit
- Tyvek® zipper with flap for enhanced protection
- overall ergonomic shape for ideal fit and protection when moving

Option:

White (sizes SM to 7XL)
Inward Leakage*: 1%

*Based on the average of 10 suits, 3 activities, 3 probes



Category III



TYPE 5-B



TYPE 6-B



EN 1149-5



Need help finding and selecting chemical protective clothing?

Visit DuPont™ SafeSPEC™

Browse and compare products by brand, design or certification,
with direct access to all relevant information including permeation data.

www.safespec.dupont.co.uk



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