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**10 things you need to
know about protecting
your skin at work**

01

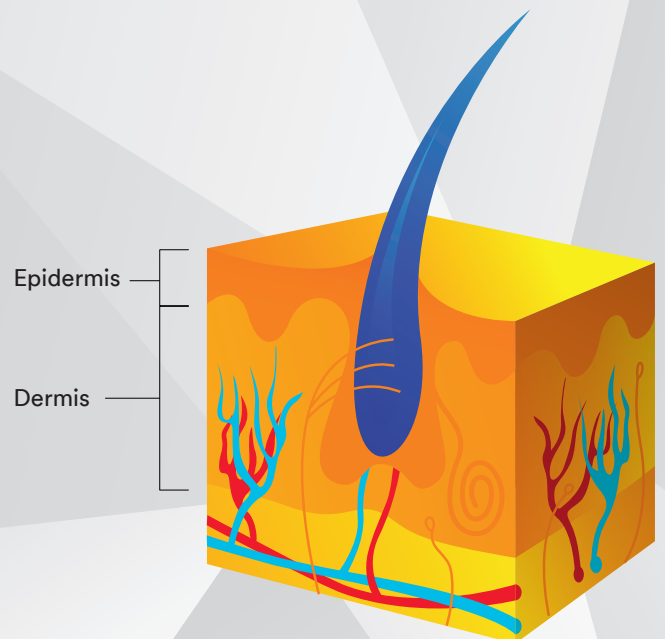
It's more than just keeping clean

Wearing Protective Clothing at work isn't just about keeping dust, or paint, or other mess off your clothes. Many substances used in or generated by work processes can be a hazard to your skin. Some substances can pass through the skin and enter the body, while others can damage the surface.

02

You're protecting the largest organ in your body

There are two main layers of skin: Dermis and Epidermis. It's the Epidermis that provides a protective barrier and restricts the loss of moisture from the body. Your skin also acts as a sensory organ, regulates temperature and produces vitamin D. Damage to the skin reduces its ability to protect your body.



03

Skin hazards exist in all kinds of work

You don't have work in Mineral Processing to come in contact with harmful chemicals at work (although if you do, you likely will). Irritants and sensitizers may exist in a wide range of occupations, such as: Agriculture, Manufacturing, Service Industry, Transportation and Utilities, Construction, even Sales.

Types of skin hazards

Burns

- Severe skin damage
- May lead to scarring
- Wet cement, strong acids, alkalis

Irritant Contact

- Causes skin reaction leading to inflammation at the site
- Dry, red, itchy skin, swelling, flaking, blistering and pain
- Repeated contact can lead to hyper-irritability
- Detergents, weak acids, some solvents

Allergic contact dermatitis

- Skin sensitizers
- Immunological response to sensitizing substance
- Latex, formaldehyde, isocyanates

Systemic Diseases

- Harmful substances pass through the skin causing disease in other parts of the body. For example, Lead, benzene
- Other diseases: skin cancer, scaly skin, red lumps, ulcer or new/changed mole, acne. For example, Coal tar, mineral oil



3M™ Protective Coverall 4515

04

Exposure can cause more than just a scar

Chemical exposures to the skin can result in temporary or permanent health impacts, which may occur at the point of contact with the chemical, or it can be distributed by the bloodstream, causing or contributing to a health problem somewhere else in the body.

05

The side effects can last a lifetime

Temporary adverse health impacts, like dry, red, cracked skin can heal with time; but they increase the chance of infection through breaks in the skin. Permanent impacts, like a scar, change of skin colour, or damage to internal organs can also be a result of chemical exposure to the skin.





06

You can manage the risk

A step by step hazard assessment can help you manage the risk of exposure

- 01 Identify Contaminants
- 02 Recognize the Physical State of the Contaminants
- 03 Measure or Estimate Concentrations
- 04 Determine Duration and Frequency
- 05 Identify Controls
- 06 Identify Skin Notations
- 07 Evaluate Work Practices

Many factors determine the most appropriate coverall and this can lead to different coveralls for the same application or job.



07

Protective clothing is the last resort

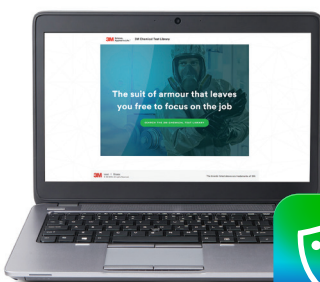
To reduce the risk of chemical exposure to the skin, first consider Prevention and Control.

Can you eliminate or substitute harmful chemicals from the job?

For example, using disposable brushes instead of reusing and cleaning them with a solvent.

If Protective Clothing is the best option, consider the risk of exposure, and what kind of protection you need. Do you need protection against solids or liquids? Will you be exposed to light liquid splash, a high volume splash or spray; or, high pressure jet spray?

Protective covers selection should always be made by a competent person, knowledgeable of the actual working conditions and limitations of PPE.



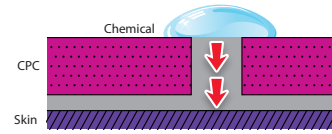
To find out more about testing or to discuss which solution may best meet your needs contact a 3M representative. You can also visit the 3M Chemical Test library on <http://go.3M.com/CHTL> to review the chemical protective properties of the fabrics used in our range and see which 3M™ Protective Apparel solution could best meet your needs.

08

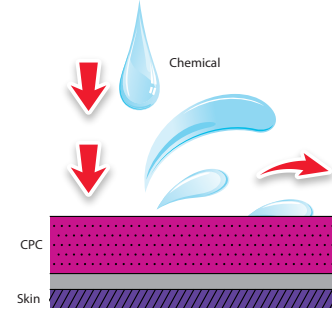
Chemicals can move through material too

Chemicals can move through the material on a molecular level; through the seams, pinholes and other openings; or can even change the physical property of the material. Ensure you have picked the correct material construction and hold out for the application you are doing, whether it be a heavy chemical protective laminate or a breathable SMS.

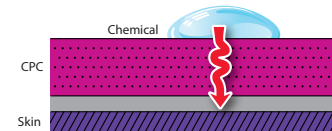
Supporting chemical testing should be available to help your decision, typically 'Gutter' penetration and repellency testing or chemical permeation tests are performed depending on the 'Type' certification of a product.



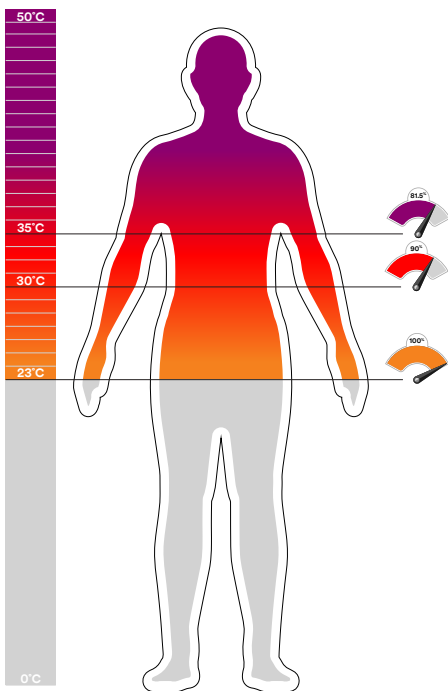
Penetration is a test to see whether a particular chemical will go through the fabric.



Repellency is a test to see whether the chemical being tested stays on the fabric or rolls off.



Permeation is the way in which molecules of a substance travel through the fabric. It occurs over 3 stages, firstly absorption of the molecules on to the surface, secondly, diffusion of the absorbed molecules within the material and finally, desorption from the opposite surface of the material. Simply, permeation testing measures the time it takes for a challenge chemical to breakthrough the material to the other side.



09

When can you be comfortable?

The human body, particularly when it is being worked hard, generates heat. If working in warm environments and wearing heavy personal protective equipment the body can struggle to manage the heat, which can lead to heat stress. Heat stress can be dangerous and puts workers at risk from heat-related illnesses such as Heat rash, Heat exhaustion, Heat cramps, collapse or fainting, Heat stroke.

Consideration of the application and the protection required can mean more breathable less chemically protective materials can be used which afford greater breathability and comfort. Some apparel is made from two types of material to offer both higher liquid protection and reduced risk of heat stress.

10

Exposing your skin to hazards is not a job requirement

Understand the risks and recognize opportunities to prevent or control exposure. Skin problems could last a lifetime, and can affect your quality of life, causing discomfort, physical limitations, and loss of personal or work time.

Discuss hazardous exposure and risk to the skin and health with a knowledgeable safety and health professional



3M™ Protective Coverall 4565

For more information on 'Choosing the right coverall', 'The Chemistry of Coveralls', 'Breathability in Protective Apparel', why 'A Seam Is Not Always What It Seems', why 'A Coverall Is Not Just A Fabric', how chemical testing is done and much more, make sure to read the 3M Technical Bulletins and information guides.



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Important Notice

This guide is only an outline. It should not be used as the only means for selecting protective clothing. Before using any protective clothing, the wearer must read and understand the user instructions for each product. Specific country legislation must be observed. If in doubt, contact a safety professional. Selection of the most appropriate PPE will depend on the particular situation and should only be made by a competent person knowledgeable of the actual working conditions and the limitations of PPE.

Final determination as to the suitability of these products for a particular situation is the employer's responsibility.

This information is subject to revision at any time. Always read and follow all User Instructions supplied with your 3M™ Protective Coveralls in order to ensure correct operation. If you have questions contact 3M Technical Service.

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