



# CONNENEY<sup>®</sup>

## SAFETY

A DIVISION OF WESCO DISTRIBUTION, INC.

## Clothing Ready Reference

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### Disposable Coveralls, Hairnets, Aprons/Sleeves, and Rainwear

1. [The Law](#)
2. [The Essentials](#)
3. [Product Reference](#)

#### 1. The Law

##### A. OSHA 1910.132

- This law requires that an employer shall assess their workplace to determine the hazards present and which personal protective equipment is required.

#### 2. The Essentials

##### A. Disposable Coveralls

Choose Coveralls Based on Application – See [DuPont's list](#) for applications and recommended material. For chemical splash concerns and finding the correct coverall, use the [DuPont SafeSPEC 2.0](#).

##### **Do Any of the Work Functions Involve Heat Stress Concerns?**

- Polypropylene is softer, absorbs some sweat, and is normally much more breathable than polyethylene (Tyvek) and the microporous fabrics (such as NexGen or house brand coveralls). Please remember that the Kleenguard Extra is considered a high end SMS polypropylene, while the house brand polypropylene will be even more breathable. However, more breathability means more particle breakthrough concerns.

##### **Does the Work Involve Toxic Dusts, Such as Asbestos or Lead?**

- Polyethylene coated, polyolefin, and microporous fabrics are far more commonly used in these environments, due to their ability to keep even the finest of dust from penetrating the disposable clothing. Nevertheless, the Kleenguard Extra coveralls (SMS polypropylene) do promote the use of their product in these more hazardous dust environments, but they will rip out easier.

##### **Does the Work Involve Pressure Washing or Possibility of Non-Toxic Chemical Splashes?**

- The Kleenguard Ultra and Tyvek can first be considered for light splashes, especially if heat stress is a concern. The Kleenguard Ultra is commonly promoted for use around pressure washers. For

more serious protection and concerns of leaking at the seams, it would make sense to consider stepping up to a coated fabric. The Repel coveralls are polypropylene coated with a polyethylene film, while the Tychem QC is Tyvek material coated with a polyethylene film. We also have an economy house brand poly-coated coverall; however, this product will not be as strong/durable as the Kleenguard Repel.

#### **Does the Work Involve a Chance of Getting Hit by Sparks or Working Near Open Flames?**

- The only disposable suit we have available for such an application is the Pyrolon Plus 2 Limited Use FR Clothing. It will not melt like the plastic-type garments. Pyrolon is actually made out of wood pulp and then sprayed with a flame-retardant coating.

#### **Does the Heavyweight Version of the House Brand Polypropylene Coveralls Compare Favorably with the Kleenguard Extra Coveralls?**

- No. The Kleenguard Extra is made of SMS material that has far better holdout to fine dusts, mists, and aerosols. The Direct Safety polypropylene coveralls are simply a spunbond polypropylene and would not keep contaminants out as well. This Direct Safety polypropylene coverall is perfectly fine for non-hazardous, dirty work. Think of the Direct Safety brand as a thicker version of the economy coveralls.

#### **What Size Should the Coveralls Be?**

- We normally recommend one size larger than what the charts indicate.
- If customers order the same size as their street clothes, the suit will normally fit too tight.
- Also need to account for wearing heavier clothes and work activities when reviewing the sizes.

### **Types of Fabrics**

#### **Polypropylene**

- **Spunbond Polypropylene** – The standard fabric for basic protective apparel formed by bonding fibers together to become a single layer of breathable, woven-like material. Its main advantages are economy, comfort, and breathability. It also provides light, non-toxic fluid protection. This is found in the Direct Safety polypropylene coveralls.
- **SMS** – A three-ply material consisting of one layer of meltblown polypropylene bonded between two layers of spunbond polypropylene. Soft, fluid-repellent, anti-static, and breathable, SMS provides an optimal mix of protection and comfort. Appropriate for extended-wear situations involving low to moderate non-toxic fluid contact. This is found in the KleenGuard Extra coveralls.
- **Coated Polypropylene** – Created when soft, spunbond polypropylene is coated with a layer of impervious polyethylene. This lightweight material is ideal for many situations demanding a higher level of splash protection. This is found in the Repel coveralls and House brand poly-coated coveralls.

#### **Polyethylene**

- **Polyethylene** – Impervious to moderate non-toxic fluid contact, polyethylene apparel provides excellent dry particle, and aerosol protection at an affordable cost. Unlike polypropylene, it resembles plastic more than cloth and has minimum breathability, but is very durable. Polyethylene is found in Tyvek and polyolefin coveralls.
- **Coated Polyethylene** – More specifically, this pertains to Tychem QC clothing. This is when regular Tyvek is coated with a layer of impervious polyethylene. That's right, polyethylene on polyethylene. Think of Tyvek as millions of thin, short strands of polyethylene layered and bonded in all directions on top of each other. When they coat this Tyvek material with Polyethylene, think of the coating as a thin film of melted plastic that keeps chemical splashes from leaking through the Tyvek.

**Polyolefin** – We have Direct Safety brand polyolefin coveralls available, which are made with a soft and breathable microporous fabric that is an economical alternative to Tyvek. This limited-use clothing is suitable for jobs such as food processing, paint spraying/finishing operations, asbestos and mold abatement, fiberglass work, and general maintenance.

#### **Flame-Retardant (FR) Fabric**

- **Pyrolon Plus 2** – This is a limited use FR coverall made of wood pulp that has been chemically treated to self-extinguish flames when exposed. Since the other disposable suits are made of a type of plastic, those suits would melt and cause severe burns to a worker exposed to flames.

#### **Chemical Resistance**

- Kleenguard  
[www.kcprofessional.com](http://www.kcprofessional.com)  
Material A60 - Kleenguard Ultra  
Material A70 - Repel  
Material A30 - Kleen guard extra.
- Dupont  
[www2.dupont.com](http://www2.dupont.com)
- Call Conney Safety Support for more info (800-462-1947)

#### **B. Hairnets**

Hairnets are required in most food processing facilities and other clean room work scenarios where hair control is critical. Most customers will know if they are required to wear a hairnet.

##### **Hairnet Sizing**

- Size of hairnet is the outer circumference when hairnet is laid flat on table
- Regardless of the hairnet size, the elastic is the same circumference within the same brand
- Customer orders a larger size based on length of hair, not size of head:
  - **Short Hair** – use size 18" or 19" hairnet
  - **Long, Thick Hair** – use various sizes up to 28" or larger
- Imported listings are less expensive, but come packaged in bags; domestic hairnets usually packaged in dispenser boxes

##### **Types of Fabrics**

###### **Sanitary Fabric**

- Made of polypropylene
- Least expensive material
- Best hair control and keeps most particulates out of hair during certain processes
- Warmest of the hairnets, but still breathes
- Various colors are available to distinguish visitors from employees and to designate between departments

###### **Stockinet**

- Most expensive material
- Durable and comfortable
- Excellent hair control
- Second warmest of the hairnets

###### **Nylon**

- Beehive grid pattern
- Breathable with good hair control

### **Fine Mesh Nylon**

- Most breathable
- Individually wrapped in tissue paper
- Poorest hair control, may not even be allowed in certain work environments
- Blends in well with hair color due to the fineness of the netting

## **C. Aprons/Sleeves**

While aprons and sleeves offer limited protection to specific areas of the body, they can be more comfortable than wearing full coveralls for protection from splashes.

### **Types of Fabrics**

#### **Chemical Resistant**

##### **Polyethylene**

- Disposable and low cost
- Majority of use is for food processing
- Thickness from 1-2 mils available
- Smooth or embossed finish, embossing adds to durability and reduces static cling

##### **Vinyl (PVC)**

- Economical, heavy-duty protection
- Use glove charts to check chemical compatibility
- Varying thicknesses and formulation of plastic
- VR apron is a high-end, long-wearing vinyl material

##### **Urethane/Nylon**

- Lightweight, excellent chemical protection
- Nylon scrim is flexible, yet strengthens apron to prevent tearing

##### **Rubber**

- Moderate chemical resistance
- Excellent abrasion and tear resistance
- Use glove charts to check chemical compatibility

##### **Neoprene**

- Broad spectrum chemical resistance
- Added protection from snags and punctures

##### **Nitrile**

- Broad spectrum chemical resistance
- Ideal for grease and animal fats in cold conditions
- Polyester scrim adds good cut and abrasion protection

##### **Silvershield**

- Highest chemical resistant apron/sleeves offered
- Material can tear easily and feels like crinkly plastic

#### **Abrasion Resistant**

##### **Cane Mesh**

- High level of cut protection
- Great for glass and metal industries
- Not intended for any chemical splashes

- Breathable

#### **Denim**

- Lightweight, flexible protection for everyday work
- Machine washable
- Bib and waist style of apron available

#### **Leather**

- Good heat and flame resistance
- Good cut and abrasion protection, great for metal handling
- Protects clothing from sparks during welding or cutting

## **D. Rainwear**

### **Rainwear Basics**

- The term “three-piece suit” implies bib overalls, a jacket, and a detachable hood
- The thickness of the suits coating is measured either by the term mil (1/1,000 of an inch) or mm (millimeters)
- The thinner the coating, the more light and flexible the suit; however, you do suffer in abrasion resistance and longevity of the material
- Remember that many rainsuits are not used for rain, but chemical protection, so it is important to match up the coating material with the chemical being used

### **Substrate/Fabric**

Substrate is a term used for the fabric that the waterproof coating is attached to which gives the suit its strength, durability, and cut resistance.

- If coated only on the outside, the rainsuit is referred to as fabric lined. This may be for comfort against the skin and sweat absorption.
- If coated on both sides or double-coated, then the fabric is referred to as a **scrim**.
- We sell one style of a 3-piece rainsuit and rain poncho without a fabric substrate, they are very economical and considered disposable.

### **Polyester**

- The most common and least expensive of the substrates
- Durable and effective

### **Nylon**

- Generally viewed as a nicer substrate
- More expensive
- Very flexible and lightweight
- Excellent cut and snag resistance

### **Cotton**

- Only used on the Vultex rubber rainwear
- Comfortable liner coated only on outside
- Suit is very heavy and bulky due to the thick rubber coating

### **Types of Coating**

The coating of a rainsuit determines the chemical resistance, flexibility, and durability.

### **PVC**

- By far the most common coating used on rainsuits
- Economical and effective for a wide range of chemicals

**Polyurethane**

- More chemical resistant than PVC
- Flexible and lightweight coating
- Stays flexible in cold weather
- Long wearing

**Neoprene**

- Excellent chemical resistance in petrochemical environments
- Stays flexible in cold and heat
- View chemical resistant charts when ordering

**Rubber**

- Acid and mildew resistant
- Excellent abrasion resistance
- Heavy coating on cotton fabric base is very durable

### **3. Product Reference**

#### **A. Disposable Coveralls**

- Respirators
- Gloves
- Hand Cleaner and Sanitizers
- Coverall Hoods
- Boots

#### **B. Hairnets**

- Plastic Hairnet Dispensers
- Hand Cleaners and Sanitizers
- Bump Caps and Hard Hats
- Boots and Boot Covers

#### **C. Aprons/Sleeves**

- Gloves
- Hand Cleaners and Sanitizers

#### **D. Rainwear**

- Safety Glasses, Goggles, and Faceshields
- Gloves
- Boots and Overshoes
- Bump Caps and Hard Hats

[Back to Top of Page](#)

[Back to Ready Reference Home Page](#)