

# **KLEENGUARD® EP PROTECTIVE CLOTHING**

## **TECHNICAL INFORMATION**

### **Intended Use**

Kleenguard® EP Coveralls are

- limited life protective clothing designed to protect the user from liquid aerosols, spray and light splashing where the risk of chemical exposure is defined as low risk, such as agricultural spraying or within the chemical industry.
- also offer protection against solid particles.
- are treated to be antistatic.
- approved as Complex design (Category 3) equipment offering protection to the levels specified for Type 6 (performance requirements for chemical protective suits offering limited protective performance against liquid chemicals) and Type 5 (particulates) by CEN. Note: Collared garments only meet Type 5, 6 if used with an appropriate hood.

### **Product Description**

Kimberly-Clark has invested in garment design and in the development of materials specifically for protective clothing to be able to offer the user the ideal combination of protection with comfort. Wearing garments of high breathability can reduce the effects of heat stress and therefore maintaining the efficiency and effectiveness of the wearer.

### **The fabric**

Kleenguard® EP Garments are made from an engineered structure called SMS which was invented by Kimberly-Clark and initially used to offer medical staff protection with comfort in critical conditions. The fabric has been developed to suit it for the challenges of industrial applications. The 3 layers of the fabric are made up of polyolefin fibres which are carefully engineered to deliver a combination of strength, durability and protection. The outer layers use large strong fibres to resist wear and tear and protect the central core layer. The centre of the structure is made up of closely packed fine fibres, which act as a highly efficient filter to particles and as a barrier to many liquids. The fabric is treated to ensure liquid repellency and antistatic properties.

### **The seams**

To provide high strength seams with barrier properties serged seams are used with triple overlock stitching.

### **The Zip**

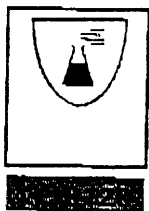
High quality full-length zips (specified as Silicone-Free) are used with stoppers to prevent strain.

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### **Symbols and Marking on the garment – what they tell you**

#### **Protection Against Chemicals**



This symbol demonstrates that the garment is suitable for protection against chemicals.

The CE mark followed by 0120 indicates that this is equipment of Complex design (Cat 3), and that the product is manufactured under a quality system which has been approved by notified body 0120 (SGS Yarsley International).



This symbol shows that the garment offers Type 6 level protection against liquids. (Limited Splash).



This symbol shows that the garment offers Type 5 level protection against particles.



This symbol demonstrates that the garment meets the necessary anti-static levels of EN 1149-1.



The open book symbol is used to remind the user that they should read the User Instructions before using Kleenguard® EP garments.

#### **Flammability**

Kleenguard® EP Garments are made from polypropylene which will begin to melt at 120°C. The garments should be kept away from open flames, sparks or intense heat sources.

#### **Washing**

Kleenguard® EP Garments are designed to be limited life and should be disposed of after use / after chemical contamination. Therefore the garment is not suitable for washing or dry cleaning.

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### Product Performance Data

To be certified as a Type 5 and Type 6 chemical protective garment, Kleenguard® EP must meet certain performance requirements laid down by CEN, the European committee for normalisation. The standards apply throughout all member states of the EU.

For each property test data is classified into bands indicated by a CLASS number on a scale where 1 is lowest. There are a different number of classes for different tests. For some tests a simple pass / fail result is given.

The product performance data for Kleenguard® EP Coveralls is shown below.

### Fabric Tests

#### B Limited Use Chemical Protective Clothing (Type 5&6)

Property	Test Method	Class/Result*
Blocking Resistance	ISO 5978	2
Flex Cracking Resistance	ISO 7854 M8	6
Burst Resistance	ISO 2960 (50cm <sup>2</sup> )	2
Puncture Resistance	EN 863	2
Resistance to Penetration by Liquids	EN 368 (30%H <sub>2</sub> SO <sub>4</sub> )	3
	EN 368 (10%NaOH)	3
Repellence to Liquids	EN 368 (30%H <sub>2</sub> SO <sub>4</sub> )	93%
	EN 368 (10%NaOH)	3
Abrasion Resistance	EN 530 M2	Class 1
Trapezoidal Tear Resistance	ISO 9073-4	Class 1
Particle Inward Leakage	CEN TC162/WG3 N113	Average Total Inward Leakage 10.7%

\* As defined in proposed European Standards documents draft prEN 13034 (1997), CEN TC WG3 Doc N250 (1996) and prEN 1513 (1997).

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### Chemical Protection Data

Chemical Name	Repellency Type 6, EN 368		Penetration Type 6, EN 368	
	%R	Class	%P	Class
Acetic acid (30%)	92.6	2	3.3	2
Ammonium Solution 12%w/v	97.0	3	0.0	3
Butyl Acetate	91.8	2	5.3	1
Cyclohexane	96.3	3	0.4	3
Hydrochloric acid (37%)	99.2	3	0.0	3
Isopropyl Alcohol	97.6	3	0.2	3
Methyl Methacrylate	91.3	2	3.7	2
Nitric Acid (conc.)	97.8	3	0.0	3
Sodium Hydroxide (50%)	98.2	3	0	3
Sodium hypochlorite (12%)	95.0	3	0	3
Sulphuric acid (98%)	97.7	3	0	3
Sulphuric acid (30%)	96.7	3	0.3	3

Please contact the **INFOFAX** Technical Support Line (fax) 0800 371873 or e-mail [info.afh.europe@kcc.com](mailto:info.afh.europe@kcc.com) if you have any technical queries regarding Kleenguard® Protective Clothing.