

## ► Gloves & Finger cots





## Chapter 3

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## Definition of cleanroom gloves

Cleanroom gloves must have certain properties in order to be used „without hesitation“ in controlled areas.

Gloves are among the most critical consumer goods in the cleanroom industry, as they are – often – used in contact with products.

The previous requirements were wearing comfort, absence of residues, etc. And above all, the product should be protected from people.

Due to application-specific requirements and changes in standards in the cleanroom world, the topic of „personal protection in the cleanroom“ has become a focus alongside product protection, so that a modern cleanroom glove should – if possible – combine both aspects.

Terms such as powder-free, fit, tactile sensitivity and ISO 5 packaging are often listed as quality features.

However, these are simply fundamental characteristics of a cleanroom glove.

Worldwide, there are no uniform standards or norms for assigning gloves to a cleanroom class. The statement „These gloves are ISO 5 gloves“ is therefore not verifiable!



## Relevant quality features

In addition to the process requirement, the documentation is also an important part of the decision-making process. The following are the most important regulations and standards on the subject of personal and product protection:

- ▶ Regulation (EU) 2016/425
- ▶ ASTM D6978 - 05(2019)
- ▶ ASTM D257-14(2021)e1
- ▶ DIN EN 374-5:2017-03
- ▶ DIN EN ISO 21420:2020-06
- ▶ EN 455-1, -2, -3
- ▶ DIN EN 16350:2014
- ▶ DIN EN 16523-1:2018-12
- ▶ IEST-RP-CC005.4
- ▶ DIN EN ISO 10993-10:2023-04
- ▶ DIN EN ISO 11137-1:2020-04



More detailed explanations can be found on page 67.

### ▶ Conclusion

To find the right cleanroom glove for your individual requirements, it is not only necessary to test a certain selection, but also to compare and check the respective documentation.

We will be happy to advise you on your choice and, if required, provide you with samples for testing purposes.

## Disposable gloves sterile / non-sterile

|            |       |
|------------|-------|
| very good  | ***** |
| good       | ****  |
| satisfying | **    |
| adequate   | *     |

|                                | Chap.        | Art. No.                          | Description  | Surface cleanliness | Grip | Elongation |
|--------------------------------|--------------|-----------------------------------|--|---------------------|------|------------|
| NITRILE                        | 3.4          | <b>3522</b>                       | Kimtech™ G3 White Nitrile  | ***                 | **   | ***        |
|                                | 3.4          | <b>3523</b>                       | Kimtech™ G3 NxT™ Nitrile   | ***                 | **   | ***        |
|                                | 3.3          | <b>3524</b>                       | Kimtech™ G3 Sterile Sterling™ Nitrile                                  | ***                 | **   | ***        |
|                                | 3.3          | <b>3529</b>                       | Kimtech™ G3 Sterile White Nitrile                                      | ***                 | **   | **         |
|                                | 3.6          | <b>3540</b>                       | Kimtech™ Purple Nitrile™   | *                   | *    | *          |
|                                | 3.6          | <b>3541</b>                       | Kimtech™ Purple Nitrile™ Xtra™   | *                   | *    | *          |
|                                | 3.6          | <b>3542</b>                       | Kimtech™ Sterling™ Nitrile   | *                   | **   | ***        |
|                                | 3.7          | <b>37760</b>                      | ANSELL AlphaTec® Solvex® 37675, protective gloves                      | **                  | **   | **         |
|                                | 3.4          | <b>3822</b>                       | SHIELDskin XTREME™ White Nitrile 300 DI++                              | *****               | **   | ***        |
|                                | 3.4          | <b>3823</b>                       | SHIELDskin XTREME™ White Nitrile 300 DI                                | **                  | **   | *          |
|                                | 3.3          | <b>38246</b>                      | SHIELDskin XTREME™ Sterile White Nitrile 600 DI+                       | ***                 | **   | **         |
|                                | 3.4          | <b>382540</b>                     | SHIELDskin XTREME™ White Nitrile 400 DI+                               | ***                 | ***  | **         |
|                                | 3.4          | <b>3827</b>                       | SHIELDskin XTREME™ Eco Nitrile 300 DI+                                 | ***                 | ***  | ***        |
|                                | 3.3          | <b>3829</b>                       | SHIELDskin XTREME™ Sterile White Nitrile 330 DI+                       | ***                 | ***  | **         |
|                                | 3.3          | <b>38244</b>                      | SHIELDskin XTREME™ Sterile White Nitrile 400 DI+                       | ***                 | ***  | **         |
|                                | 3.6          | <b>3845</b>                       | duoSHIELD™ ICE NITRILE™ 240  | *                   | **   | **         |
|                                | 3.6          | <b>3847</b>                       | ecoSHIELD™ Eco Nitrile PF 250  | *                   | **   | **         |
|                                | 3.3          | <b>37828</b>                      | Isofield® Volta  | ***                 | **   | ***        |
|                                | 3.3          | <b>37829</b>                      | Isofield® Eclipse  | ***                 | ***  | **         |
| 3.4                            | <b>37825</b> | Isofield® NS400                   | ***  | ***                 | **   |            |
| POLYCHLOROPRENE (NEOPRENE)     | 3.3          | <b>37302</b>                      | BioClean™ Ultimate BUPS  | **                  | ***  | *****      |
|                                | 3.3          | <b>37303</b>                      | BioClean™ Fusion S-BFAP  | ***                 | ***  | *****      |
|                                | 3.3          | <b>37309</b>                      | BioClean™ Suprene BSNS   | *                   | ***  | *****      |
| NITRILE-POLYCHLOROPRENE BLENDS | 3.7          | <b>37740</b>                      | MAPA® AdvanTech 517, protective gloves (latex/nitrile polychloroprene) | *                   | **   | *****      |
|                                | 3.3          | <b>3828</b>                       | SHIELDskin™ ORANGE NITRILE™ 300 Sterile                                | *                   | ***  | ***        |
|                                | 3.3          | <b>3828-1</b>                     | SHIELDskin XTREME™ ORANGE Sterile NITRILE™ 300 DI                      | ***                 | **   | *****      |
|                                | 3.6          | <b>3840</b>                       | SHIELDskin™ ORANGE NITRILE™ 260  | *                   | **   | ***        |
|                                | 3.6          | <b>3841</b>                       | SHIELDskin™ ORANGE NITRILE™ 300  | *                   | ***  | ***        |
|                                | 3.6          | <b>3842</b>                       | SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI                              | **                  | **   | *****      |
| 3.7                            | <b>3843</b>  | SHIELDskin CHEM™ NEO NITRILE™ 300 | *  | **                  | ***  |            |

| Minimal endotoxin pollution | Ion-free | Cytostatics compatible | Chemical protection | Version     |         |          |              |               |         |            | length in mm | AQL  |
|-----------------------------|----------|------------------------|---------------------|-------------|---------|----------|--------------|---------------|---------|------------|--------------|------|
|                             |          |                        |                     | non-sterile | sterile | textured | ambidextrous | hand specific | polybag | box packed |              |      |
| *                           | ***      | ****                   | **                  | ✓           |         | ✓        | ✓            |               | ✓       |            | 305          | 1.5  |
| *                           | ***      | ****                   | **                  | ✓           |         | ✓        | ✓            |               | ✓       |            | 305          | 1.5  |
| ***                         | *        | ***                    | **                  |             | ✓       | ✓        |              | ✓             | ✓       |            | 305          | 1.5  |
| ***                         | **       | ****                   | *                   |             | ✓       | ✓        |              | ✓             | ✓       |            | 305          | 1.5  |
| *                           | *        | **                     | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 250          | 0.65 |
| *                           | *        | **                     | **                  | ✓           |         | ✓        | ✓            |               |         | ✓          | 305          | 0.65 |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 250          | 0.65 |
| *                           | *        | *                      | ****                | ✓           |         |          | ✓            |               | ✓       |            | 330          | 0.65 |
| *                           | *****    | *                      | ***                 | ✓           |         | ✓        | ✓            |               | ✓       |            | 300          | 1.5  |
| *                           | *        | *                      | **                  | ✓           |         | ✓        | ✓            |               | ✓       |            | 300          | 1.5  |
| ****                        | **       | ****                   | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 600          | 0.65 |
| *                           | ***      | *                      | ***                 | ✓           |         | ✓        | ✓            |               | ✓       |            | 400          | 1.5  |
| *                           | ***      | *                      | *                   | ✓           |         | ✓        | ✓            |               | ✓       |            | 300          | 1.5  |
| ****                        | **       | ****                   | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 330          | 0.65 |
| ****                        | **       | ****                   | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 400          | 0.65 |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 240          | 1.5  |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 250          | 0.65 |
| ***                         | *        | ***                    | *                   |             | ✓       | ✓        |              | ✓             | ✓       |            | 300          | 0.65 |
| ****                        | **       | ***                    | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 400          | 0.65 |
| ****                        | **       | ***                    | ***                 | ✓           |         | ✓        | ✓            |               | ✓       |            | 400          | 1.5  |
| **                          | **       | ***                    | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 300          | 0.65 |
| **                          | **       | ***                    | ***                 |             | ✓       | ✓        | ✓            |               | ✓       |            | 300          | 0.65 |
| *                           | **       | ***                    | ****                |             | ✓       | ✓        |              | ✓             | ✓       |            | 300          | 1.5  |
| *                           | *        | *                      | ****                | ✓           |         | ✓        | ✓            |               | ✓       |            | 360          | 1.5  |
| **                          | *        | ***                    | ***                 |             | ✓       | ✓        | ✓            |               | ✓       |            | 300          | 0.25 |
| ***                         | **       | ****                   | ***                 |             | ✓       | ✓        |              | ✓             | ✓       |            | 300          | 0.65 |
| *                           | *        | *                      | **                  | ✓           |         | ✓        | ✓            |               |         | ✓          | 260          | 0.65 |
| *                           | *        | ***                    | ***                 | ✓           |         | ✓        | ✓            |               |         | ✓          | 300          | 0.25 |
| *                           | **       | ****                   | ***                 | ✓           |         | ✓        | ✓            |               | ✓       |            | 300          | 0.25 |
| *                           | *        | *                      | ****                | ✓           |         | ✓        | ✓            |               |         | ✓          | 300          | 0.25 |



# Overview matrix

## Disposable gloves sterile / non-sterile

|            |       |
|------------|-------|
| very good  | ***** |
| good       | ****  |
| satisfying | ***   |
| adequate   | **    |
|            | *     |

| Surface cleanliness | Grip | Elongation |
|---------------------|------|------------|
| *                   | **   | *****      |
| **                  | *    | *****      |
| **                  | **   | *****      |
| *                   | **   | *****      |
| *                   | ***  | *****      |
| *                   | ***  | *****      |
| **                  | **   | *****      |
| *                   | ***  | *****      |

LATEX

| Chap. | Art. No.    | Description                             |
|-------|-------------|---|
| 3.4   | <b>3501</b> | Kimtech™ G5 Latex                       |
| 3.4   | <b>3503</b> | Kimtech™ G3 Latex                       |
| 3.3   | <b>3509</b> | Kimtech™ G3 Sterile Latex               |
| 3.3   | <b>3808</b> | SHIELDskin XTREME™ Sterile Latex 300 DI |
| 3.6   | <b>3531</b> | Kimtech™ PFE Latex                      |
| 3.6   | <b>3535</b> | Kimtech™ PFE-Xtra™ Latex                |
| 3.4   | <b>3801</b> | SHIELDskin XTREME™ Bright Latex 300 DI+ |
| 3.6   | <b>3831</b> | duoSHIELD™ PFT 240                      |

## Textile gloves knitted / sewn

SEWN TEXTILE GLOVES

| Chap. | Art. No.        | Description  | Abrasion resistance | Sense of touch |
|-------|-----------------|--|---------------------|----------------|
| 3.8   | <b>30080-00</b> | Cotton mixture, layered fingers  | *                   | **             |
| 3.7   | <b>30900-26</b> | FG-26 (300 °C), heat protection gloves, 99% meta-aramid / 1% conductive fibre        | *****               | *              |
| 3.7   | <b>30900-40</b> | FG-39 (300 °C), heat protection gloves, 99% meta-aramid / 1% conductive fibre        | *****               | *              |
| 3.7   | <b>30950</b>    | CRYO-INDUSTRIAL® WP 615 (-160 °C), cold protection gloves, forearm length, with cuff | *****               | *              |

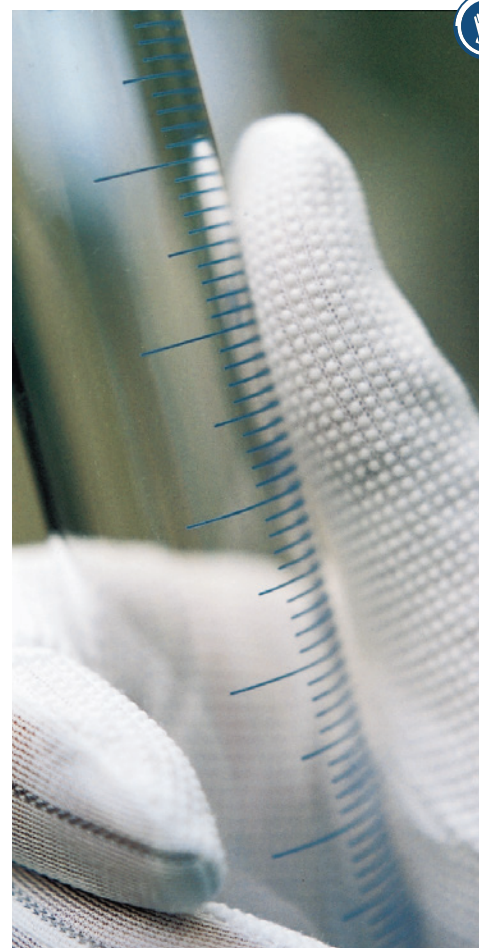
KNITTED/SEAMLESS TEXTILE GLOVES

|     |                   |   |    |     |
|-----|-------------------|---|----|-----|
| 3.8 | <b>300600100</b>  | Antibacterial gloves, cotton with silver threads, seamless                    | *  | *** |
| 3.8 | <b>300600200</b>  | Antibacterial half-finger undergloves, cotton with silver threads, seamless   | *  | *** |
| 3.8 | <b>30100</b>      | Polyamide stretch, PU-coated fingertips                                       | ** | *** |
| 3.8 | <b>30110</b>      | Polyamide stretch with copper filament yarn, fingertips PU coated, antistatic | ** | *** |
| 3.8 | <b>30120</b>      | Polyamide stretch with carbon filament yarn, fingertips PU coated, antistatic | ** | *** |
| 3.8 | <b>3015T1</b>     | Polyamide stretch, palm side PU-coated  | ** | *** |
| 3.8 | <b>30160</b>      | Polyamide stretch with copper filament yarn, PU-coated inside, antistatic     | ** | *** |
| 3.7 | <b>30180</b>      | Polyamide stretch with carbon filament yarn, PU-coated inside, antistatic     | ** | *** |
| 3.8 | <b>30191-HYC5</b> | TH-1000, cut resistant gloves   | ** | *** |
| 3.8 | <b>30300</b>      | Polyamide stretch, without seams, without coating                             | *  | *** |
| 3.8 | <b>30310</b>      | Nylon stretch, half finger  | *  | *** |
| 3.8 | <b>30320</b>      | Polyamide stretch with copper filament yarn, without coating, antistatic      | *  | *** |

| Minimal endotoxin pollution | Ion-free | Cytostatics compatible | Chemical protection | Version     |         |          |              |               |         |            | length in mm | AQL  |
|-----------------------------|----------|------------------------|---------------------|-------------|---------|----------|--------------|---------------|---------|------------|--------------|------|
|                             |          |                        |                     | non-sterile | sterile | textured | ambidextrous | hand specific | polybag | box packed |              |      |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               | ✓       |            | 305          | 1.5  |
| *                           | **       | *                      | *                   | ✓           |         | ✓        | ✓            |               | ✓       |            | 305          | 1.5  |
| **                          | **       | **                     | *                   |             | ✓       | ✓        |              | ✓             | ✓       |            | 305          | 1.5  |
| **                          | *        | **                     | *                   |             | ✓       | ✓        |              | ✓             | ✓       |            | 300          | 0.65 |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 250          | 1.5  |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 300          | 1.5  |
| *                           | **       | *                      | **                  | ✓           |         | ✓        | ✓            |               | ✓       |            | 300          | 1.5  |
| *                           | *        | *                      | *                   | ✓           |         | ✓        | ✓            |               |         | ✓          | 240          | 1.5  |

| Grip | Elongation | Conductivity | Coating | length |
|------|------------|--------------|---------|--------|
| *    | **         | ***          | none    | 25 cm  |
| *    | *          | ***          | none    | 26 cm  |
| *    | *          | ***          | none    | 40 cm  |
| *    | **         | *            | none    | 40 cm  |

|     |      |     |              |         |
|-----|------|-----|--------------|---------|
| *   | **** | *** | none         | ≥ 23 cm |
| *   | **** | *** | none         | ≥ 19 cm |
| **  | **** | *   | polyurethane | 23 cm   |
| **  | **** | *** | polyurethane | 23 cm   |
| **  | **** | *** | polyurethane | 23 cm   |
| *** | **** | *   | polyurethane | 23 cm   |
| *** | **** | *** | polyurethane | 23 cm   |
| *** | **** | *** | polyurethane | 23 cm   |
| *** | **** | *   | polyurethane | 23 cm   |
| *   | **** | *   | none         | 23 cm   |
| *   | **** | *   | none         | 16 cm   |
| *   | **** | *** | none         | 23cm    |





## For microbiological and particle controlled areas

| Description                                      | sterile | Size                          | PU                               | Art. No. |
|--|---------|-------------------------------|----------------------------------|----------|
| Kimtech™ G3 Sterile Latex                        | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 3509     |
| SHIELDskin XTREME™ Sterile Latex 300 DI          | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 3808     |
| Kimtech™ G3 Sterile Sterling™ Nitrile            | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 300 pairs<br>bag packed in pairs | 3524     |
| Kimtech™ G3 Sterile White Nitrile                | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 3529     |
| SHIELDskin™ ORANGE NITRILE™ 300 Sterile          | yes     | XS, S, M, L, XL               | 160 pairs<br>bag packed in pairs | 3828     |
| SHIELDskin™ ORANGE Sterile NITRILE™ 300 DI       | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 3828-1   |
| BioClean™ Ultimate BUPS                          | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9     | 200 pairs<br>bag packed in pairs | 37302    |
| BioClean™ Fusion S-BFAP                          | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9     | 200 pairs<br>bag packed in pairs | 37303    |
| BioClean™ Supreme BSNS                           | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9     | 200 pairs<br>bag packed in pairs | 37309    |
| Isofield® Volta                                  | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 37828    |
| <b>Special length</b>                            |         |                               |                                  |          |
| Isofield® Eclipse                                | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 37829    |
| SHIELDskin XTREME™ Sterile White Nitrile 330 DI+ | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 3829     |
| SHIELDskin XTREME™ Sterile White Nitrile 400 DI+ | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 200 pairs<br>bag packed in pairs | 38244    |
| SHIELDskin XTREME™ Sterile White Nitrile 600 DI+ | yes     | 6, 6 ½, 7, 7 ½, 8, 8 ½, 9, 10 | 100 pairs<br>bag packed in pairs | 38246    |



400 mm

330 mm

400 mm

600 mm

### Necessary basic requirements for cleanroom compatible, sterile disposable gloves, depending on the specific application:

- ▶ low particle emission through appropriate washing and drying processes (DI water, HEPA filter)
- ▶ minimum length of 30 cm
- ▶ cleanroom compatible packaging (poly bags)
- ▶ powder-free
- ▶ correct documentation (batch-related certificates of analysis, sterilization certificates and declaration of conformity)

On request we will gladly send you samples to determine the right size!



Product specific characteristics see overview matrix page 50 – 53.

## For only particle controlled areas



### Necessary basic requirements for cleanroom compatible disposable gloves, depending on the specific application:

- ▶ low particle emission through appropriate washing and drying processes (DI water, HEPA filter)
- ▶ low ionic pollution
- ▶ minimum length of 30 cm
- ▶ cleanroom compatible packaging (poly bags)
- ▶ powder-free
- ▶ ESD compatible if required
- ▶ correct documentation (batch-related certificates of analysis, sterilization certificates and declaration of conformity)

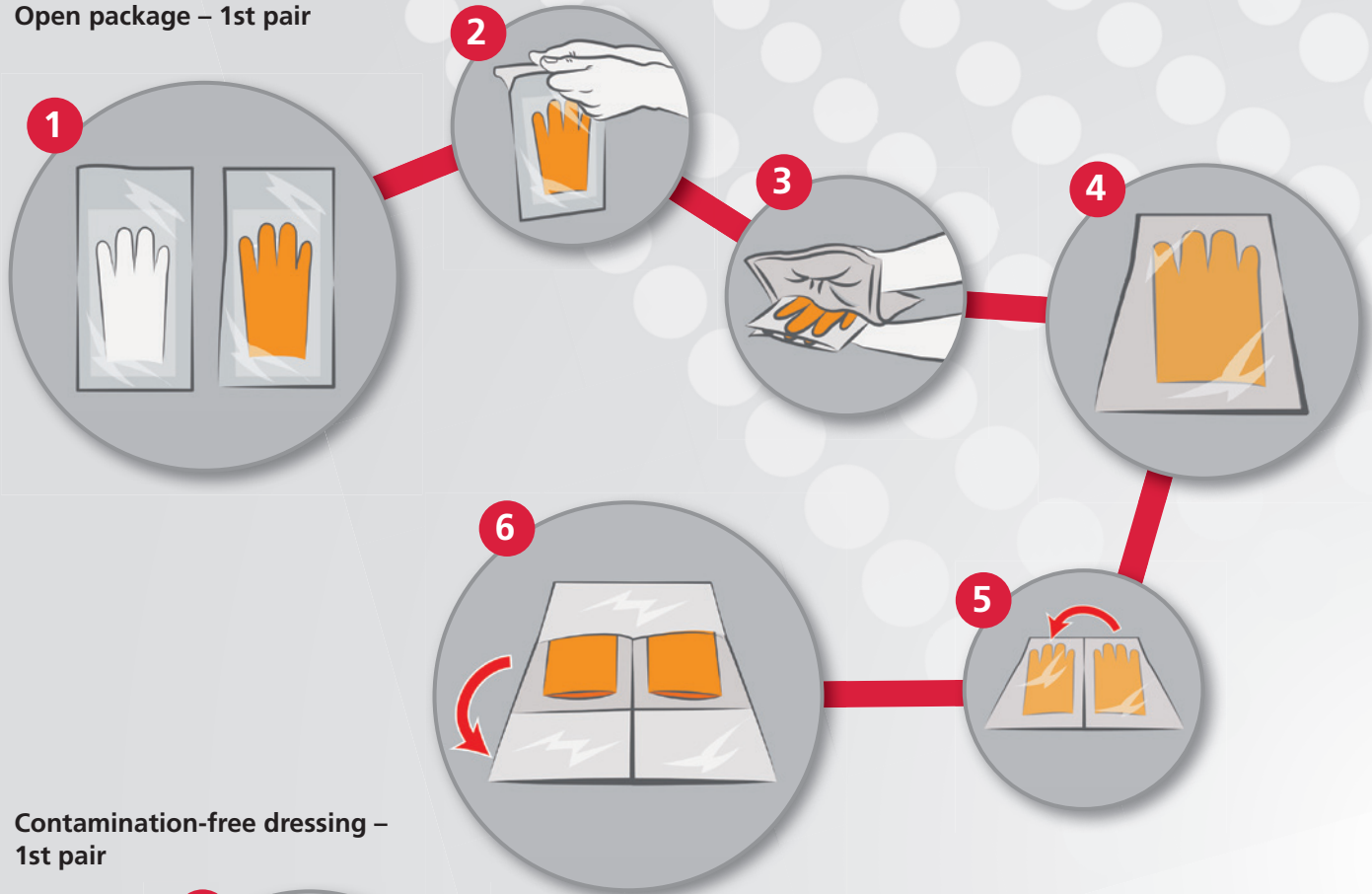
| Description                               | sterile | Size                 | PU                                    | Art. No. |
|---|---------|----------------------|---------------------------------------|----------|
| Kimtech™ G5 Latex                         | no      | S, M, L, XL          | 1,000 peaces<br>10 bags of 100 peaces | 3501     |
| Kimtech™ G3 Latex                         | no      | S, M, L, XL          | 1,000 peaces<br>10 bags of 100 peaces | 3503     |
| SHIELDskin XTREME™ Bright Latex 300 DI+   | no      | S, M, L, XL          | 1,000 peaces<br>10 bags of 100 peaces | 3801     |
| Kimtech™ G3 White Nitrile                 | no      | XS, S, M, L, XL      | 1,000 peaces<br>10 bags of 100 peaces | 3522     |
| Kimtech™ G3 NxT™ Nitrile                  | no      | XS, S, M, L, XL      | 1,000 peaces<br>10 bags of 100 peaces | 3523     |
| SHIELDskin XTREME™ White Nitrile 300 DI++ | no      | XS, S, M, L, XL, XXL | 1,000 peaces<br>10 bags of 100 peaces | 3822     |
| SHIELDskin XTREME™ White Nitrile 300 DI   | no      | XS, S, M, L, XL, XXL | 1,000 peaces<br>10 bags of 100 peaces | 3823     |
| SHIELDskin XTREME™ Eco Nitrile 300 DI+    | no      | XS, S, M, L, XL, XXL | 1,500 peaces<br>10 bags of 150 peaces | 3827     |
| <b>Special length</b>                     |         |                      |                                       |          |
| SHIELDskin XTREME™ White Nitrile 400 DI+  | no      | XS, S, M, L, XL, XXL | 1,000 peaces<br>10 bags of 100 peaces | 382540   |
| Isofield® NS400                           | no      | S, M, L, XL, XXL     | 1,000 peaces<br>10 bags of 100 peaces | 37825    |



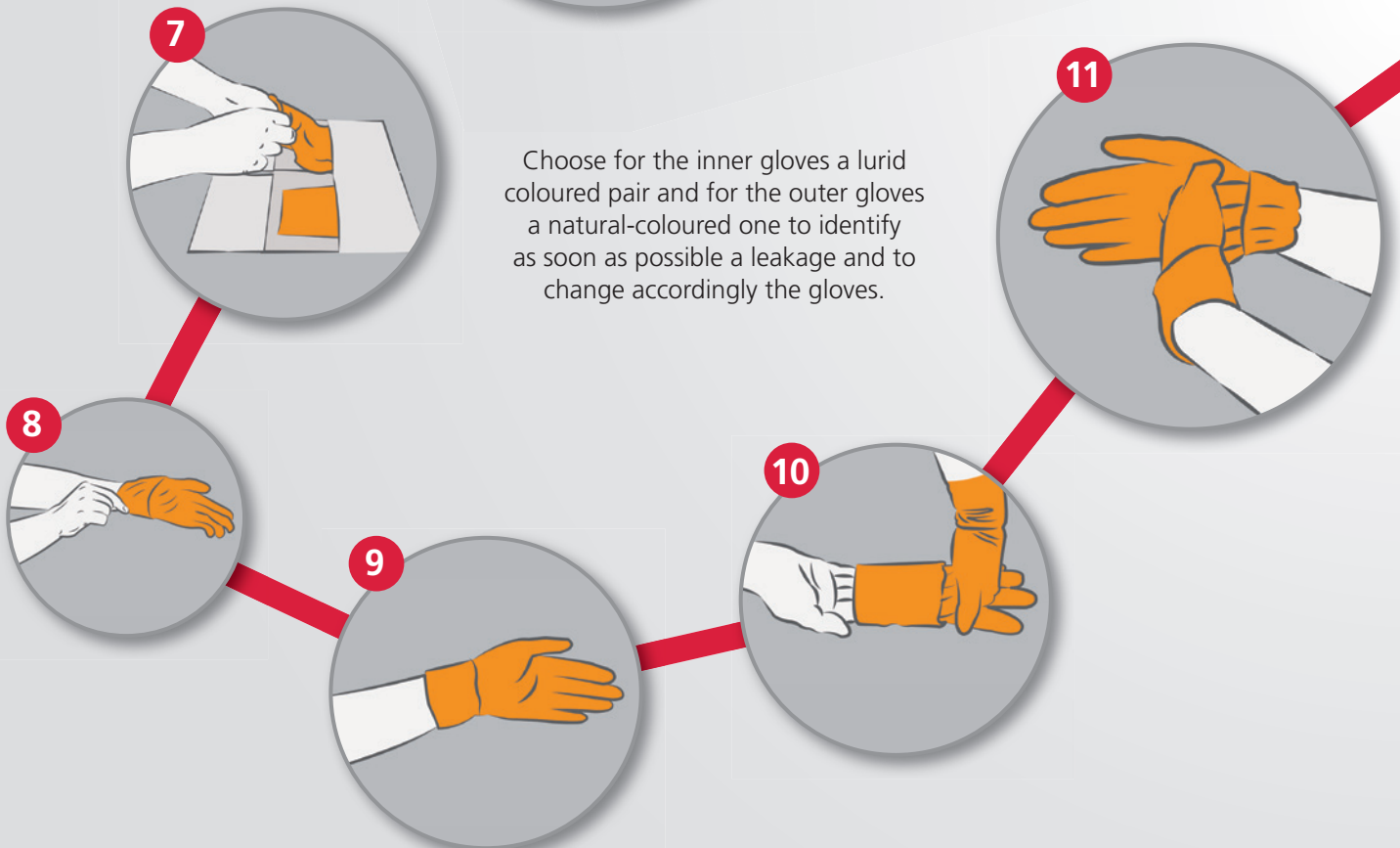
# Application technique of double donning sterile cleanroom gloves

## Double gloving

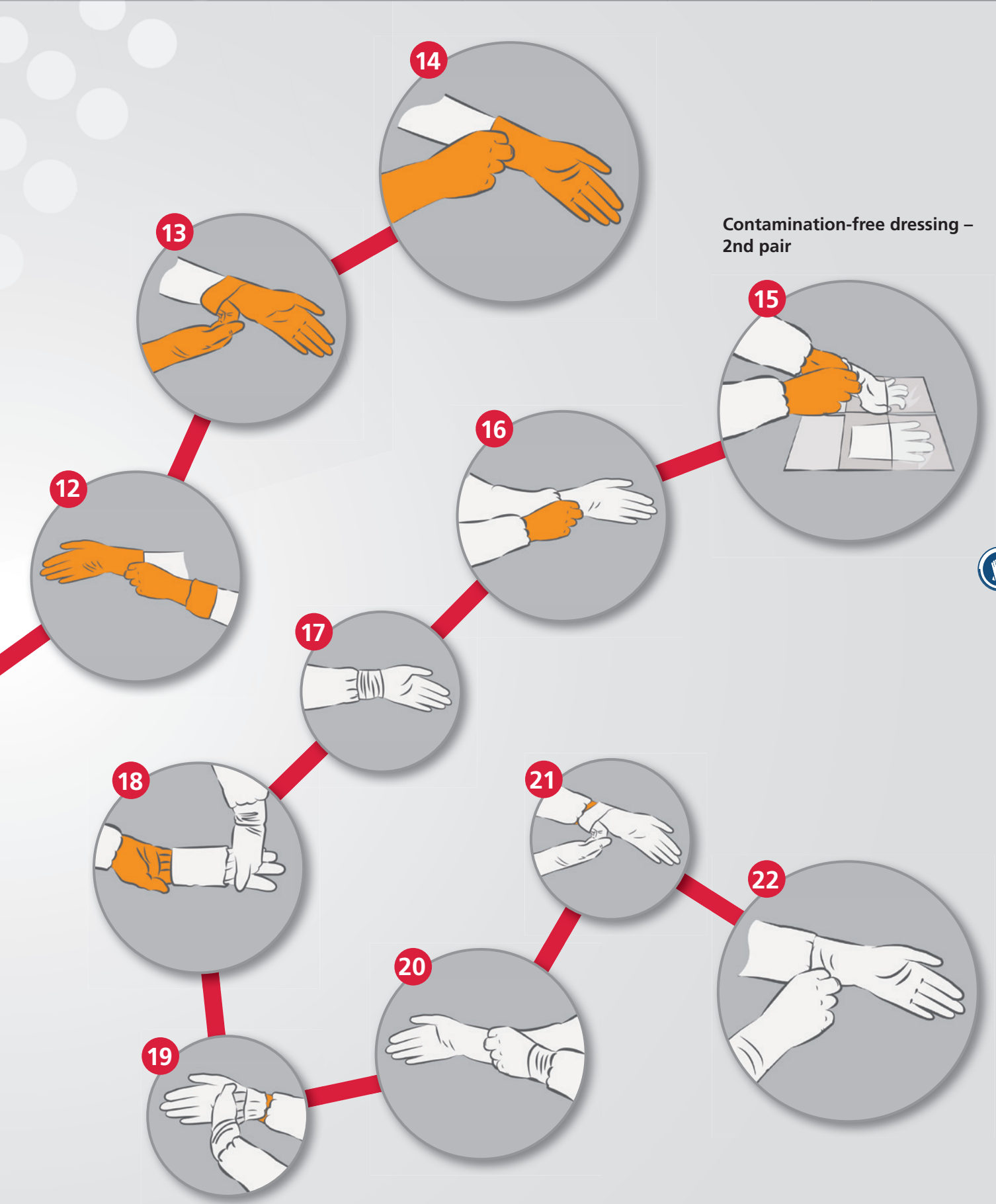
### Open package – 1st pair



### Contamination-free dressing – 1st pair



Choose for the inner gloves a lurid coloured pair and for the outer gloves a natural-coloured one to identify as soon as possible a leakage and to change accordingly the gloves.



# Disposable gloves for basic requirements

## For particle and microbiological controlled areas



| Description   | sterile | Size                 | PU                                     | Art. No. |
|---|---------|----------------------|--|----------|
| <b>Bag packed (Recommended packaging for cleanrooms!)</b> |         |                      |  |          |
| <b>SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI</b>          | no      | XS, S, M, L, XL, XXL | 1,000 peaces<br>10 bags of 100 peaces  | 3842     |
| <b>Box packed</b>   |         |                      |  |          |
|   |         | XL*                  | 900 peaces, 10 boxes of 90 peaces      |          |
|   |         | XL**                 | 1,400 peaces, 10 boxes of 140 peaces   |          |
| <b>KIMTECH™ PFE Latex 250 mm</b>                          | no      | XS, S, M, L, XL*     | 1,000 peaces<br>10 boxes of 100 peaces | 3531     |
| <b>duoSHIELD™ PFT 240</b>                                 | no      | XS, S, M, L, XL      | 1,000 peaces<br>10 boxes of 100 peaces | 3831     |
| <b>Kimtech™ PFE-Xtra™ Latex</b>                           | no      | S, M, L, XL          | 500 peaces<br>10 boxes of 50 peaces    | 3535     |
| <b>Kimtech™ Purple Nitrile™</b>                           | no      | XS, S, M, L, XL*     | 1,000 peaces<br>10 boxes of 100 peaces | 3540     |
| <b>Kimtech™ Purple Nitrile™ Xtra™</b>                     | no      | XS, S, M, L, XL      | 500 peaces<br>10 boxes of 50 peaces    | 3541     |
| <b>Kimtech™ Sterling™ Nitrile</b>                         | no      | XS, S, M, L, XL**    | 1,500 peaces<br>10 boxes of 150 peaces | 3542     |
| <b>duoSHIELD™ ICE NITRILE™ 240</b>                        | no      | XS, S, M, L, XL      | 1,000 peaces<br>10 boxes of 100 peaces | 3845     |
| <b>ecoSHIELD™ Eco Nitrile PF 250</b>                      | no      | XS, S, M, L, XL      | 1,500 peaces<br>10 boxes of 150 peaces | 3847     |
| <b>SHIELDskin™ ORANGE NITRILE™ 260</b>                    | no      | XS, S, M, L, XL      | 900 peaces<br>10 boxes of 90 peaces    | 3840     |
| <b>SHIELDskin™ ORANGE NITRILE™ 300</b>                    | no      | XS, S, M, L, XL      | 500 peaces<br>10 boxes of 50 peaces    | 3841     |

### Necessary basic requirements for cleanroom compatible disposable gloves, depending on the specific application:

- ▶ low particle emission through appropriate washing and drying processes (DI water, HEPA filter)
- ▶ minimum length of 30 cm
- ▶ cleanroom compatible packaging (poly bags)
- ▶ powder-free
- ▶ correct documentation (batch-related certificates of analysis, sterilization certificates and declaration of conformity)



**Product specific characteristics see overview matrix page 50 – 53.**

## For safe applications



**Necessary basic requirements for cleanroom compatible disposable or textile gloves, depending on the specific application:**

- ▶ particle emission as low as possible
- ▶ low ionic pollution
- ▶ minimum length of 30 cm
- ▶ cleanroom compatible packaging (poly bags)
- ▶ powder-free
- ▶ no finger prints as far as possible
- ▶ ESD compatible, if required



If no ESD protection is required, there are no compulsory ESD standards for textile gloves. Nevertheless a meaningful technical data sheet should be available.

## Chemical protection



| Description   | sterile | Size                 | PU                                   | Art. No. |
|---|---------|----------------------|--------------------------------------|----------|
| <b>ANSELL AlphaTec® Solvex® 37675, protective gloves</b> (330 mm) | no      | 6, 7, 8, 9, 10, 11   | 12 pairs per bag / 12 PE-bags/carton | 37760    |
| <b>MAPA® AdvanTech 517, protective gloves</b> (360 mm)            | no      | XS, S, M, L, XL      | 72 pairs<br>6 bags of 12 pairs       | 37740    |
| <b>SHIELDSkin CHEM™ NEO NITRILE™ 300</b> (300 mm)                 | no      | XS, S, M, L, XL, XXL | 400 peaces<br>10 boxes of 40 peaces  | 3843     |

## Heat protection / Cold protection / Cut protection

| Description  | sterile | Size             | PU                              | Art. No.   |
|--|---------|------------------|---------------------------------|------------|
| <b>CRYO-INDUSTRIAL® WP 615, cold protection gloves</b> (-160 °C)                     | no      | M, L, XL         | 1 pair per bag                  | 30950      |
| <b>FG-26, heat protection gloves</b> (+300 °C) 260 mm long                           | no      | M, L, XL, XXL    | 1 pair per bag                  | 30900-26   |
| <b>FG-39, heat protection gloves</b> (+300 °C) 400 mm long                           | no      | M, L, XL, XXL    | 1 pair per bag                  | 30900-40   |
| <b>TH-1000, cut resistant gloves</b><br>ANSI Level 2, tested according to ASTM F1790 | no      | S, M, L, XL, XXL | 10 pairs<br>bag packed in pairs | 30191-HYC5 |



Art. No.  
30950



Art. No.  
40255-2



Art. No.  
3843



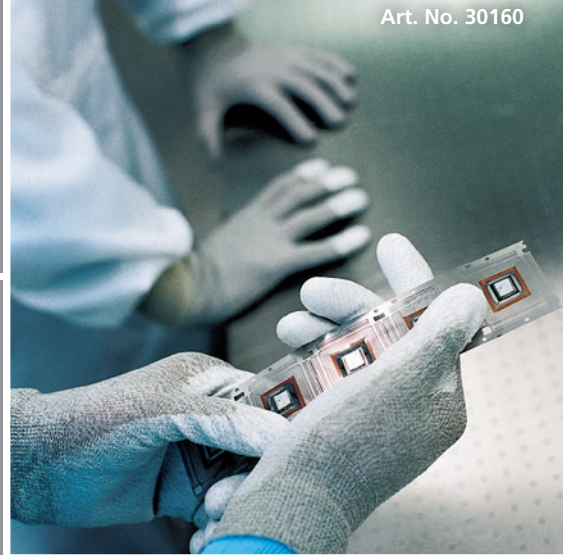
Art. No.  
3501



Art. No.  
37307



Art. No. 30160



Art. No.  
3842



Art. No.  
30100



Art. No.  
402511



Art. No.  
3535



Art. No. 30300



Art. No.  
300600100



Art. No.  
300600200



Art. No.  
3847



Art. No. 3541



Art. No.  
3845



## For simple applications

| Description  | sterile | Size  | PU        | Carton quantity    | Art. No.  |
|--|---------|---|-----------|--------------------|-----------|
| <b>Polyamide stretch gloves</b><br>PU-coated fingertips  | no      | XS, S, M, L,<br>XL, XXL                               | 10 pairs  | 25 PU<br>250 pairs | 30100     |
| <b>Polyamide stretch gloves with copper filament yarn</b><br>fingertips PU coated, antistatic  | no      | XS, S, M, L<br>XL, XXL                                | 10 pairs  | 25 PU<br>250 pairs | 30110     |
| <b>Polyamide stretch gloves with carbon filament yarn</b><br>fingertips PU coated, antistatic  | no      | XS, S, M, L,<br>XL, XXL                               | 10 pairs  | 25 PU<br>250 pairs | 30120     |
| <b>Polyamide stretch gloves</b><br>palm side PU-coated   | no      | XS, S, M, L,<br>XL, XXL                               | 10 pairs  | 25 PU<br>250 pairs | 3015T1    |
| <b>Polyamide stretch gloves with copper filament yarn</b><br>PU-coated inside, antistatic  | no      | S, M, L,<br>XL, XXL                                   | 10 pairs  | 25 PU<br>250 pairs | 30160     |
| <b>Polyamide stretch gloves with carbon filament yarn</b><br>PU-coated inside, antistatic  | no      | S, M, L,<br>XL, XXL                                   | 10 pairs  | 25 PU<br>250 pairs | 30180     |
| <b>Polyamide stretch gloves</b><br>seamless, without coating   | no      | S, M, L,<br>XL, XXL, XXXL                             | 10 pairs  | 25 PU<br>250 pairs | 30300     |
| <b>Polyamide stretch gloves with copper filament yarn</b><br>without coating, antistatic   | no      | S, M, L,<br>XL, XXL, XXXL                             | 10 pairs  | 25 PU<br>250 pairs | 30320     |
| <b>Nylon stretch gloves</b><br>half finger   | no      | S, M, L,<br>XL, XXL                                   | 10 pairs  | 25 PU<br>250 pairs | 30310     |
| <b>Cotton mixture</b><br>layered fingers   | no      | 6-7, 8-9, 10-11,<br>12-13, 14-15                      | 300 pairs | 1 PU<br>300 pairs  | 30080-00  |
| <b>Antibacterial gloves</b> (e.g. for neurodermatitis)<br>8% silver, 88% cotton, 3% polyamide, 1% elastane,<br>seamless                  | no      | XS (6 - 6.5)<br>S - M (7 - 8.5)<br>L - XXL (9 - 10,5) | 2 pairs   | 1 PU<br>2 pairs    | 300600100 |
| <b>Antibacterial half-finger undergloves</b><br>(e.g. for neurodermatitis) 8% silver, 88% cotton,<br>3% polyamide, 1% elastane, seamless | no      | S - M (7 - 8,5)<br>L - XXL (9 - 10,5)                 | 2 pairs   | 1 PU<br>2 pairs    | 300600200 |

### Necessary basic requirements for cleanroom compatible, textile gloves, depending on the specific application:

- ▶ particle emission as low as possible
- ▶ as little fibre abrasion as possible
- ▶ no finger prints as far as possible
- ▶ packaging suitable for cleanrooms (polybag)
- ▶ ESD compatible, if required

If no ESD is required, there is also no compulsory ESD standard specification. Nevertheless a meaningful technical data sheet should be available.



Product specific characteristics see overview matrix page 52 - 53.







| Description   | sterile | Size              | PU                                    | Art. No. |
|---|---------|-------------------|---------------------------------------|----------|
| <b>Latex finger cots</b><br>powder free, smooth, natural    | no      | S, M, L, XL       | 1,440 peaces<br>2 PE-bags of 720 pcs. | 402003   |
| <b>Nitril finger cots</b><br>powder free, antistatic, white | no      | S, M, L, XL       | 720 peaces<br>in 1 PE-bag             | 40230    |
| <b>Latex finger cots</b><br>powder free, conductive, black  | no      | S, M, L, L/XL, XL | 1,440 peaces<br>2 PE-bags of 720 pcs. | 402511   |
| <b>Latex finger cots</b><br>powder free, antistatic, pink   | no      | S, M, L, XL, XXL  | 1,440 peaces<br>2 PE-bags of 720 pcs. | 40255-2  |

Finger cots are used in workplaces with lower cleanroom requirements if the product is to be protected from fingerprints caused by grease and particles from human skin.

Primarily three qualities with different values of electrical conductivity are used:

- ▶ normal, non-conductive finger cots
- ▶ antistatic finger cots, surface resistance according to manufacturer specifications max.  $10^{10}$  Ohm
- ▶ Finger cots with high conductivity, mostly in black, surface resistance according to manufacturer's specifications approx.  $2 \times 10^6$  Ohm

Art. No.  
37309



Art. No.  
30110



Art. No.  
37303



Art. No.  
37735



Art. No.  
37740



Art. No.  
30900-40



Art. No.  
30320



Art. No.  
37760



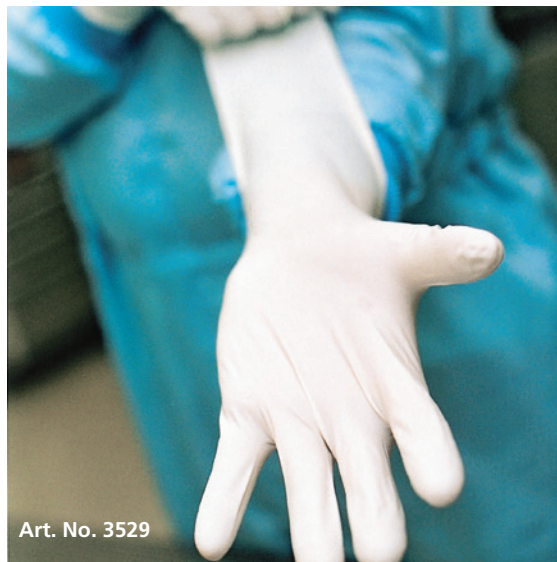
Art. No. 3823



Art. No.  
3522



Art. No. 3529



Art. No.  
3015T1



Art. No.  
3540



# Product recommendations referring to cleanroom classes

Recommendations (\*)

Cleanrooms and associated controlled environments – Part 1  
Classification of air cleanliness by particle concentration EN ISO 14644-1

|                                   |                                   | 3   | 4 | 5 | 6 | 7 | 8 | 9 |   |
|-----------------------------------|-----------------------------------|---|---|---|---|---|---|---|---|
| <b>NITRILE</b>                    | <b>3522</b>                       | Kimtech™ G3 White Nitrile                         |   | ■ | ■ | ■ | ■ | ■ |   |
|                                   | <b>3523</b>                       | Kimtech™ G3 NxT™ Nitrile                          |   |   | ■ | ■ | ■ | ■ |   |
|                                   | <b>3524</b>                       | Kimtech™ G3 Sterile Sterling™ Nitrile             |   |   |   |   |   |   |   |
|                                   | <b>3529</b>                       | Kimtech™ G3 Sterile White Nitrile                 |   |   |   |   |   |   |   |
|                                   | <b>3540</b>                       | Kimtech™ Purple Nitrile™                          |   |   |   |   |   | ■ |   |
|                                   | <b>3541</b>                       | Kimtech™ Purple Nitrile™ Xtra™                    |   |   |   |   |   | ■ |   |
|                                   | <b>3542</b>                       | Kimtech™ Sterling™ Nitrile                        |   |   |   |   |   | ■ |   |
|                                   | <b>37760</b>                      | ANSELL AlphaTec® Solvex® 37675, protective gloves |   |   |   |   | ■ | ■ | ■ |
|                                   | <b>3822</b>                       | SHIELDskin XTREME™ White Nitrile 300 DI++         |   | ■ | ■ | ■ | ■ | ■ | ■ |
|                                   | <b>3823</b>                       | SHIELDskin XTREME™ White Nitrile 300 DI           |   |   |   | ■ | ■ | ■ | ■ |
|                                   | <b>38246</b>                      | SHIELDskin XTREME™ Sterile White Nitrile 600 DI+  |   |   |   |   |   |   |   |
|                                   | <b>382540</b>                     | SHIELDskin XTREME™ White Nitrile 400 DI+          |   |   | ■ | ■ | ■ | ■ | ■ |
|                                   | <b>38244</b>                      | SHIELDskin XTREME™ Sterile White Nitrile 400 DI+  |   |   |   |   |   |   |   |
|                                   | <b>3827</b>                       | SHIELDskin XTREME™ Eco Nitrile 300 DI+            |   |   | ■ | ■ | ■ | ■ | ■ |
|                                   | <b>3829</b>                       | SHIELDskin XTREME™ Sterile White Nitrile 330 DI+  |   |   |   |   |   |   |   |
|                                   | <b>3845</b>                       | duoSHIELD™ ICE NITRILE™ 240                       |   |   |   |   |   |   | ■ |
|                                   | <b>3847</b>                       | ecoSHIELD™ Eco Nitrile PF 250                     |   |   |   |   |   |   | ■ |
| <b>37828</b>                      | Isofield® Volta                   |   |   |   |   |   |   |   |   |
| <b>37829</b>                      | Isofield® Eclipse                 |   |   |   |   |   |   |   |   |
| <b>37825</b>                      | Isofield® NS400                   |   | ■ | ■ | ■ | ■ | ■ | ■ |   |
| <b>POLYCHLOROPRENE (NEOPRENE)</b> | <b>37302</b>                      | BioClean™ Ultimate BUPS                           |   |   |   |   |   |   |   |
|                                   | <b>37303</b>                      | BioClean™ Fusion S-BFAP                           |   |   |   |   |   |   |   |
|                                   | <b>37309</b>                      | BioClean™ Suprene BSNS                            |   |   |   |   |   |   |   |
| <b>NITRILE-POLYISOPRENE BLEND</b> | <b>37740</b>                      | MAPA® AdvanTech 517, protective gloves            |   |   |   |   |   | ■ |   |
|                                   | <b>3828</b>                       | SHIELDskin™ ORANGE NITRILE™ 300 Sterile           |   |   |   |   |   | ■ |   |
|                                   | <b>3828-1</b>                     | SHIELDskin XTREME™ ORANGE Sterile NITRILE™ 300 DI |   |   |   |   |   | ■ |   |
|                                   | <b>3840</b>                       | SHIELDskin™ ORANGE NITRILE™ 260                   |   |   |   |   |   | ■ |   |
|                                   | <b>3841</b>                       | SHIELDskin™ ORANGE NITRILE™ 300                   |   |   |   |   | ■ | ■ |   |
|                                   | <b>3842</b>                       | SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI         |   |   |   |   | ■ | ■ |   |
| <b>3843</b>                       | SHIELDskin CHEM™ NEO NITRILE™ 300 |   |   |   |   | ■ | ■ |   |   |



| low dust | Hygiene zones<br>(microbiological controlled areas)<br>according to GMP |   |   |   |   |
|----------|---|---|---|---|---|
|          | A   | B | C | D | E |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
|          | ■   | ■ |   |   |   |
|          | ■   | ■ |   |   |   |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
|          | ■   | ■ |   |   |   |
| ■        | ■   | ■ |   |   |   |
| ■        |   |   | ■ | ■ | ■ |
| ■        |   |   | ■ | ■ | ■ |
|          | ■   | ■ |   |   |   |
| ■        | ■   | ■ |   |   |   |
| ■        |   |   | ■ | ■ | ■ |
|          | ■   | ■ |   |   |   |
|          | ■   | ■ |   |   |   |
| ■        |   |   | ■ | ■ | ■ |
|          | ■   | ■ |   |   |   |
|          | ■   | ■ |   |   |   |
|          | ■   | ■ |   |   |   |



Double gloving – application technique of double donning sterile cleanroom gloves

|   |  |   |   |   |   |
|---|--|---|---|---|---|
| ■ |  |   | ■ | ■ | ■ |
|   |  | ■ |   |   |   |
|   |  | ■ |   |   |   |
| ■ |  |   | ■ | ■ | ■ |
| ■ |  |   | ■ | ■ | ■ |
| ■ |  |   | ■ | ■ | ■ |
| ■ |  |   | ■ | ■ | ■ |

(\*)  
A one-to-one classification of cleanroom gloves to a cleanroom class according to ISO 14644-1 is not possible. Recommendations can only be made based on cleanroom specific requirements, e.g. „abrasion resistance“ or „particle emission“. In the VDI guidance 2083 Part 9.2 the user can find additional information.



# Product recommendations referring to cleanroom classes

| Recommendations (*)               |   | Cleanrooms and associated controlled environments – Part 1<br>Classification of air cleanliness by particle concentration EN ISO 14644-1 |   |   |   |   |   |   |
|-----------------------------------|---|--|---|---|---|---|---|---|
|                                   |   | 3  | 4 | 5 | 6 | 7 | 8 | 9 |
| LATEX                             | <b>Art. No.</b>                         | <b>Description</b>   |   |   |   |   |   |   |
|                                   | 3501                                    | Kimtech™ G5 Latex  |   |   |   | ■ | ■ | ■ |
|                                   | 3503                                    | Kimtech™ G3 Latex  |   |   | ■ | ■ | ■ | ■ |
|                                   | 3509                                    | Kimtech™ G3 Sterile Latex  |   |   |   |   |   |   |
|                                   | 3808                                    | SHIELDskin XTREME™ Sterile Latex 300 DI  |   |   |   |   |   |   |
|                                   | 3531                                    | Kimtech™ PFE Latex   |   |   |   |   |   | ■ |
|                                   | 3535                                    | Kimtech™ PFE-Xtra™ Latex   |   |   |   |   |   | ■ |
| 3801                              | SHIELDskin XTREME™ Bright Latex 300 DI+ |  |   | ■ | ■ | ■ | ■ |   |
| 3831                              | duoSHIELD™ PFT 240                      |  |   |   |   |   | ■ |   |
| SEWN TEXTILE GLOVES               | 30080-00                                | Cotton mixture, layered fingers  |   |   |   |   |   |   |
|                                   | 30900-26                                | FG-26 (300 °C), heat protection gloves, 99% meta-aramid / 1% conductive fibre  |   |   |   | ■ | ■ | ■ |
|                                   | 30900-40                                | FG-39 (300 °C), heat protection gloves, 99% meta-aramid / 1% conductive fibre  |   |   |   | ■ | ■ | ■ |
|                                   | 30950                                   | CRYO-INDUSTRIAL® WP 615 (-160 °C), cold protection gloves, forearm length, cuff  |   |   |   |   | ■ | ■ |
| KNITTED / SEAMLESS TEXTILE GLOVES | 300600100                               | Antibacterial gloves, cotton with silver threads, seamless   |   |   |   |   |   | ■ |
|                                   | 300600200                               | Antibacterial half-finger undergloves, cotton with silver threads, seamless  |   |   |   |   |   | ■ |
|                                   | 30100                                   | Polyamide stretch, PU-coated fingertips  |   |   |   |   | ■ | ■ |
|                                   | 30110                                   | Polyamide stretch with copper filament yarn, fingertips PU coated, antistatic  |   |   |   |   | ■ | ■ |
|                                   | 30120                                   | Polyamide stretch with carbon filament yarn, fingertips PU coated, antistatic  |   |   |   |   | ■ | ■ |
|                                   | 3015T1                                  | Polyamide stretch, palm side PU-coated   |   |   |   |   | ■ | ■ |
|                                   | 30160                                   | Polyamide stretch with copper filament yarn, PU-coated inside, antistatic  |   |   |   |   | ■ | ■ |
|                                   | 30180                                   | Polyamide stretch with carbon filament yarn, PU-coated inside, antistatic  |   |   |   |   | ■ | ■ |
|                                   | 30191-HYC5                              | TH-1000, cut resistant gloves  |   |   |   |   | ■ | ■ |
|                                   | 30300                                   | Polyamide stretch, without seams, without coating  |   |   |   |   |   | ■ |
|                                   | 30310                                   | Nylon stretch, half finger   |   |   |   |   |   | ■ |
|                                   | 30320                                   | Polyamide stretch with copper filament yarn, without coating, antistatic   |   |   |   |   |   | ■ |

(\*)

A one-to-one classification of cleanroom gloves to a cleanroom class according to ISO 14644-1 is not possible. Recommendations can only be made based on cleanroom specific requirements, e.g. „abrasion resistance“ or „particle emission“. In the VDI guidance 2083 Part 9.2 the user can find additional information.

