



NEW

ISO 18889 STANDARD PROTECTION FROM PESTICIDES GLOVE SELECTION



G1 gloves
Low potential risk tasks



G2 gloves
High potential risk tasks



GR gloves
Re-entry tasks

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A solution
for every hand
that works

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PROFESSIONAL

ISO 18889: 2019 STANDARD

PROTECTIVE GLOVES FOR PESTICIDE OPERATORS AND RE-ENTRY WORKERS

BACKGROUND

Workers in farm & agriculture sectors are frequently exposed to numerous pesticides hazardous to health. These chemicals should be handled with precautions.

Hand protection is fundamental as our hands are the main route of contamination. Gloves are necessary to protect against risks while maintaining comfort, ease of movement and dexterity.

This standard establishes minimum performance, classification, and labelling requirements for gloves worn by operators handling pesticide products and re-entry workers to protect the hands and sometimes forearms against contact with those substances.

GLOVE CLASSIFICATION

Protective gloves are classified into 2 categories:



PERFORMANCE REQUIREMENTS

| Protection | Test | Standard | Requirements | | |
|------------|-------------|--------------|--|--|---|
| | | | G1 | G2 | GR |
| Chemical | Penetration | EN 374-2 | pass | pass | no requirement |
| | Permeation | EN ISO 374-1 | min. Type C | min. Type B | ≥ level 2 with letter K |
| | | ISO 19918 | ≤ 10 µg/cm ² with diluted pesticide | ≤ 1 µg/cm ² with diluted and concentrated pesticide | ≤ 1 µg/cm ² with diluted pesticide |
| Mechanical | Abrasion | | | ≥ level 2 | ≥ level 2 |
| | Cut | EN 388 | no requirement | ≥ level 1 or ≥ level A | ≥ level 1 or ≥ level A |
| | | | | no requirement | ≥ level 1 |
| | Tear | | | no requirement | ≥ level 1 |
| | Puncture | | | ≥ level 1 | ≥ level 1 |

TEST METHOD: ISO 19918

Measure the cumulative permeation which is the quantity of chemical (in µg/cm²) that permeates the glove material during a specified time.

Chemical used: pesticide surrogate EC-DY

Contact time:

- G1, G2, GR gloves: **1 hour** contact with surrogate EC-DY diluted at 2,5%

- G2 gloves: **15 minutes** contact with surrogate EC-DY concentrated

PRODUCTS SELECTION



Do not forget to check pesticides labels that clearly specify required protective gloves or refer to the manufacturer. It is important to wear the necessary gloves before handling pesticides and until the end of the cleaning of the equipment

G1 GLOVES

Disposable gloves are often used for diluted pesticides handling and with no mechanical risk.



SOLO 977

The best single-use glove protection for tasks where dexterity is required. Good compromise between thickness, suppleness and resistance.

Applications:

sprayers & nozzles maintenance, tractor cabin filter change, short contact with treated seeds or crops

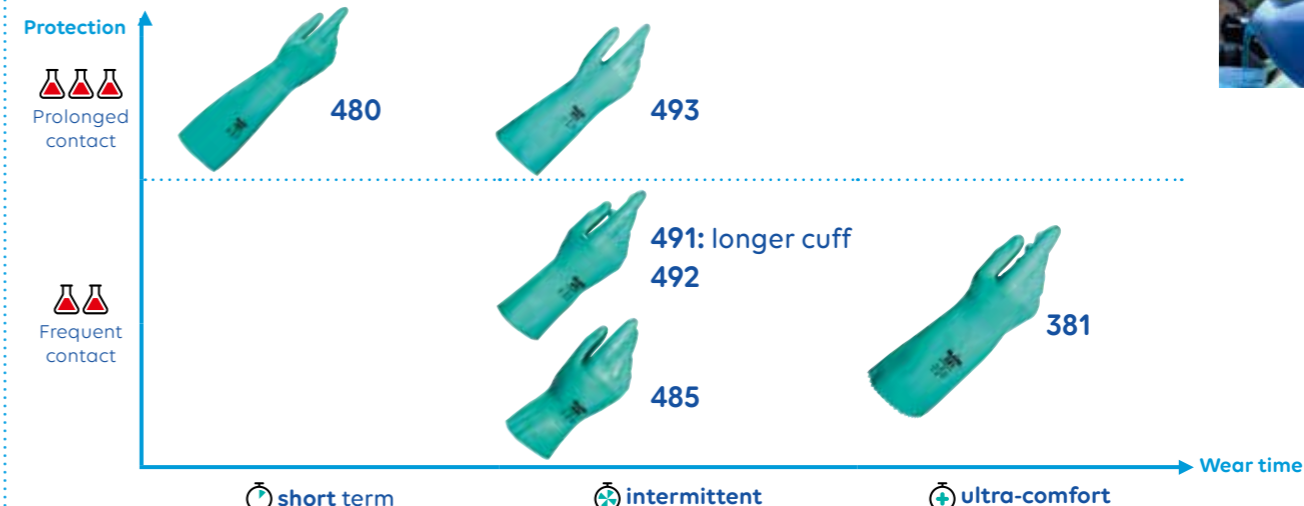


RELATIVELY LOW POTENTIAL CHEMICAL RISK

G2 GLOVES

Reusable chemical nitrile gloves are often used for pesticides handling. They are suitable with most formulations and well suited to the work.

A selection of **ULTRANITRIL** gloves with an ensured grip among different lengths, thicknesses and internal finishes.



Applications:

spray mixtures preparation, tank filling, application & spreading on crops, pesticides waste management, treatment equipment cleaning.

HIGHER POTENTIAL RISK

GR GLOVES

Mechanical gloves

are often used for workers in contact with dry and partially dry pesticide residues that remain on the plant.

Applications:

treated plants handling, re-entry tasks

HANDLING PROTECTION

Gloves with assured grip and skin protected with excellent dexterity. Washable 3 times at 40°



ULTRANE 500
Palm and fingers coated



ULTRANE 525
¾ coated



ULTRANE 526
Full-coated



CUT PROTECTION

Gloves with moderate cut protection (level B) with optimal grip for precise handling.



KRYTECH 580
Palm and fingers coated



KRYTECH 599
¾ coated
















KRYTECH 600
Full-coated



PARTIAL HAND PROTECTION GLOVE

PRODUCT SPECIFICATION

| Glove classification | Category | Picture | Product name | Standards | Length & thickness | Internal & external finish |
|---|---|---|----------------------------|--|--------------------|---|
| G1 glove Relatively low potential risk | Chemical Protection Disposable |  | SOLO 977 | TYPE B JKT ISO 18889 | 24 cm 0.10 mm | Chlorinated Smooth with pebbled fingertips |
| G2 glove Higher potential risk | Chemical Protection Reusable |  | ULTRANITRIL 480 | 4102X TYPE A AJKOPT ISO 18889 | 46 cm 0.55 mm | Chlorinated Non-slip embossing |
| | |  | ULTRANITRIL 493 | 3101X TYPE A AJKOPT VIRUS ISO 18889 | 39 cm 0.55 mm | Flocked Non-slip embossing |
| | |  | ULTRANITRIL 491 | 3101X TYPE A AJKOPT VIRUS ISO 18889 | 37 cm 0.38 mm | Flocked Non-slip embossing |
| | |  | ULTRANITRIL 492 | 3101X TYPE A AJKOPT VIRUS ISO 18889 | 32 cm 0.38 mm | Flocked Non-slip embossing |
| | |  | ULTRANITRIL 381 | 3111A TYPE A JKLOPT X1XXXX ISO 18889 | 35,5 cm 0.95 mm | Mapa technology textile support Non-slip embossing |
| | |  | ULTRANITRIL 485 | 3101X TYPE B JKOPT ISO 18889 | 31 cm 0.34 mm | Flocked Non-slip embossing |
| | | GR glove Re-entry tasks Partial hand protection glove | Handling Protection |  | ULTRANE 500 | |
|  | ULTRANE 525 | | | 4121X ISO 18889 | 23-28 cm | Seamless knitted textile support ¾ coated Gauge 13 |
|  | ULTRANE 526 | | | | 23-28 cm | Seamless knitted textile support Full coated Gauge 13 |
| Cut Protection Level B |  | | KRYTECH 580 | | 23-28 cm | Seamless textile support from HDPE fibres Grip&Proof nitrile coating on palm and fingers Gauge 13 |
| |  | | KRYTECH 599 | 4342B ISO 18889 | 23-28 cm | Seamless knitted textile support of HDPE fibre 3/4 Grip&Proof nitrile coating Gauge 13 |
| |  | | KRYTECH 600 | | 23-28 cm | Seamless knitted textile support of HDPE fibre Full coating in Grip&Proof nitrile Gauge 13 |

FOR G2 GLOVES PROPER USE:

 Did you know that more than 95% of exposures occur during the preparation of spray pesticides mixtures? Do not handle pesticides without wearing suitable gloves

1 Before usage inspect the gloves for any **defect** or **imperfections**

2 Wash your hands with **soapy water** and **dry**

3 Don the glove

- Length < 30 cm : put the glove **under** the chemical coverall sleeve
- Length > 30 cm: put the glove **on top** of the chemical coverall sleeve and **turn the cuff over**



4 When the task is over, **wash your gloved hands**

5 **Do**ff the gloves and **store** them in **proper place**

6 Wash your hands with **soapy water**

Donning & specific instructions of use available on mapa-pro.com