Cleaning and Disinfection of Dräger Personal Protective Equipment
Overview about procedures and specifications (machine and manual)
WHY CARING FOR YOUR PPE IS IMPORTANT
Your personal protective equipment (PPE) becomes contaminated with harmful substances from the incident site as well as from the wearer itself. A correct cleaning of your PPE after use avoids cross contamination and supports the health of the user. Furthermore it ensures the functionality of your PPE. Only a cleaned PPE is a safe PPE to wear.

HOW TO CLEAN AND MAINTAIN PPE CORRECTLY
Cleaning and maintenance of Dräger PPE shall be only performed by qualified and competent personnel. This overview only applies to full and half masks and not apply to Filtering Face Piece (FFP). Service technicians must wear suitable PPE during the cleaning and disinfection measures. Always observe the guidance of related product Instruction for Use (IFU) and detailed cleaning instructions. After the washing and drying process, the PPE product must be subject to a visual and functional test/inspection. The cleaning equipment should be services regulary.

NOTE: Disinfecting Wipes do not replace the right disinfection process with correct concentration and exposure time of PPE in a immersion bath or in machines. Only for first cleaning purposes.

WHY YOU SHOULD TAKE A CLOSE LOOK
Apparent small details can make a big difference. Please read the information carefully and pay good attention to details:
- Cleaning and Disinfection method
- Temperature specifications
- Concentration
- Soak and exposure time

WHICH DETERGENT PRODUCTS SHALL BE USED FOR RECONDITIONING
On the following pages, we have compiled an overview for manual and machine cleaning and drying of Dräger PPE with various detergents, which all have been tested and approved as suitable.

Ecolab – Incidin® Rapid*, Sekusept® Cleaner, Neutral Disinfectant Cleaner*, Sekumatic® FDR*, Eltra®
Dräger – Dräger SafetyWash*
Dr. Weigert – neodisher® MediClean Forte, neoform® K plus*, neodisher® Dekonta AF*
Diversey – Suma® Jade Pur-Eco L8, Suma® Med Alu, Suma® Med Neutralizer

*These agents must be used explicitly against corona virus.
Manual reconditioning
of PPE

**Phase 1**
Cleaning
Concentration: 0.5 – 1%
Temperature: max. 30 °C

**Phase 2**
Rinsing
with potable water

**Phase 3**
Disinfection
Concentration: 1.5%
Temperature: max. 30 °C
Duration: 15 min

**Phase 4**
Rinsing
with potable water

**Phase 5**
Drying
Temperature max. 60 °C

**Phase 1**
Cleaning
Concentration: 2 oz / 1 gallon
Temperature: max. 86 °F/ 30 °C

**Phase 2**
Rinsing
with potable water

**Phase 3**
Disinfection
Concentration: 2 oz / 1 gallon
Temperature: max. 86 °F/ 30 °C
Duration: 10 min

**Phase 4**
Rinsing
with potable water

**Phase 5**
Drying
Temperature max. 140 °F/ 60 °C
Manual reconditioning of PPE

Phase 1
Cleaning
Concentration: 10 ml/L – 30 ml/L (1.0 % – 3.0 %)
Temperature: max. 40 °C

Phase 2
Rinsing with potable water

Phase 3
Disinfection
Concentration: 10 ml/L (1.0 %)
Temperature: min. 20 °C, max. 30 °C
Duration: 15 min

Phase 4
Rinsing with potable water

Phase 5
Drying
Temperature max. 60 °C
Manual reconditioning of PPE

**Phase 1**
**Cleaning**
Concentration: Add 60 ml to 9.0 l potable water (0.66 %)
Temperature: max. 30 °C

**Phase 2**
**Rinsing**
with potable water

**Phase 3**
**Disinfection**
Concentration: 10 %
(add 100 ml SafetyWash to 900 ml potable water)
Temp.: min. 20 °C, max. 30 °C
Duration: 5 min

**Phase 4**
**Rinsing**
with potable water

**Phase 5**
**Drying**
Temperature max. 60 °C
# Machine reconditioning of PPE

### Tumbling washing machine
(max. 50 rpm)
+ Drying cabinet

### Cleaning and Disinfection

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecolab Eltra®</td>
<td>All-purpose disinfectant powder</td>
<td>7 g/l (especially for enveloped viruses, coronavirus)</td>
</tr>
<tr>
<td>Ecolab Sekumatic® FDR</td>
<td>Detergent and disinfectant</td>
<td>10 ml/l (1%)</td>
</tr>
<tr>
<td>Dr. Weigert neodisher® Dekonta AF</td>
<td>Detergent and disinfectant</td>
<td>10 ml/l (1%)</td>
</tr>
<tr>
<td>Dr. Weigert neodisher® TN</td>
<td>Rinsing agent neutralizer</td>
<td>0.8 ml/l (0.08%)</td>
</tr>
<tr>
<td>Diversey Suma® Jade Pur-Eco L8</td>
<td>Detergent</td>
<td>4 ml/l (0.4%)</td>
</tr>
<tr>
<td>Dr. Weigert neodisher® MediClean Forte</td>
<td>Detergent</td>
<td>10 ml/l (1%)</td>
</tr>
</tbody>
</table>

### Cleaning and Disinfection Phases

<table>
<thead>
<tr>
<th>Phase 1 Warm-up and pre-cleaning</th>
<th>Phase 2 Cleaning and disinfection</th>
<th>Phase 3 Rinsing</th>
<th>Phase 4 Drying</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 min</td>
<td>20 min</td>
<td>6 cycles à 3 min</td>
<td>Drying</td>
</tr>
<tr>
<td>Temp. max. 60 °C</td>
<td>Temp. 60 °C</td>
<td>20 ±5 °C</td>
<td>Temp. max. 60 °C</td>
</tr>
<tr>
<td>20 min</td>
<td>5 min</td>
<td>6 cycles à 3 min</td>
<td>Drying</td>
</tr>
<tr>
<td>Temp. max. 60 °C</td>
<td>Temp. 60 °C</td>
<td>20 ±5 °C</td>
<td>Temp. max. 60 °C</td>
</tr>
<tr>
<td>20 min</td>
<td>5 min</td>
<td>6 cycles à 3 min</td>
<td>Drying</td>
</tr>
<tr>
<td>Temp. max. 55 °C</td>
<td>Temp. 60 °C</td>
<td>20 ±5 °C</td>
<td>Temp. max. 60 °C</td>
</tr>
<tr>
<td>20 min</td>
<td>2 min</td>
<td>6 cycles à 3 min</td>
<td>Drying</td>
</tr>
<tr>
<td>Temp. max. 55 °C; max. 60 °C</td>
<td>Temp. 55 °C</td>
<td>20 ±5 °C</td>
<td>Temp. max. 60 °C</td>
</tr>
</tbody>
</table>
Machine reconditioning of PPE

**Spray nozzle type machine**
- Drying cabinet

**Cleaning and Disinfection**
- Ecolab Sekumatic® FDR
  - Detergent and disinfectant
  - Concentration: 10 ml/l (1%)
- Dr. Weigert neodisher® Dekonta AF
  - Detergent and disinfectant
  - Concentration: 10 ml/l (1%)
- Dr. Weigert neodisher® TN
  - Rinsing agent neutralizer
  - Concentration: 0.8 ml/l (0.08%)

**Cleaning**
- Diversey Suma® Jade Pur-Eco L8
  - Detergent
  - Concentration: 4 ml/l (0.4%)
- Diversey Suma® Jade Med Neutral
  - Rinsing agent neutralizer
  - Concentration: 0.5 - 1 ml/l (0.05 – 0.1%)
- Dr. Weigert neodisher® MediClean Forte
  - Detergent
  - Concentration: 10 ml/l (1%)
  - Dr. Weigert neodisher® TN
  - Rinsing agent neutralizer
  - Concentration: 0.01 – 0.8 ml/l (0.01 – 0.08%)

**Phase 1**
- Cleaning and disinfection
  - 5 – 22 min
  - Temp. 60 °C

**Phase 3**
- Rinsing
  - 6 cycles à 3 min
  - 20 ±5 °C

**Phase 3**
- Drying
  - Temp. max. 60 °C
Machine reconditioning of PPE

**Dräger MFC 7000**
Cleaning and drying cabinet

**Cleaning and Disinfection**
- **Ecolab Sekumatic® FDR**
  - Detergent and disinfectant
  - Concentration: 10 ml/l (1%)  
- **Dr. Weigert neodisher® Dekonta AF**
  - Detergent and disinfectant
  - Concentration: 10 ml/l (1%)
- **Dr. Weigert neodisher® TN**
  - Rinsing agent neutralizer
  - Concentration: 0.8 ml/l (0.08%)

**Cleaning**
- **Diversey Suma® Jade Pur-Eco L8**
  - Detergent
  - Concentration: 4 ml/l (0.4%)  
- **Diversey Suma® Jade Med Neutral**
  - Rinsing agent neutralizer
  - Concentration: 0.5 – 1 ml/l (0.05 – 0.1%)
- **Dr. Weigert neodisher® MediClean Forte**
  - Detergent
  - Concentration: 10 ml/l (1%)  
  - Dr. Weigert neodisher® TN
  - Rinsing agent neutralizer
  - Concentration: 0.1 – 0.8 ml/l (0.01 – 0.08%)

**Phase 1**
Cleaning and disinfection
- min. 5 min
- Temp. 60 °C

**Phase 3**
Rinsing
- 6 cycles à 3 min
- 20 ±5 °C

**Phase 3**
Drying
- Drying
- Temp. max. 60 °C
IMPORTANT INFORMATION CORONAVIRUS 2019-nCoV
Dräger's Important Information during the Novel Coronavirus Outbreak Coronavirus (COVID-19 or nCoV) for updated information please visit

Wearing protective equipment alone is no guarantee for protection against bacteria, viruses or biologically-contaminated fluids! Only correct dressing and undressing as well as thorough disinfection, in addition to wearing protective equipment, protects the wearer from possible infection and spread of contamination.

GUIDANCE FROM INTERNATIONAL ORGANIZATIONS
1. WHO: Technical Guidance & Information Center (Updated Regularly)
2. RKI - Robert Koch Institute, Germany
   https://www.rki.de/EN/
3. ESICM: Best Practices & Information Center (Updated Regularly)
   https://www.esicm.org/resources/coronavirus-public-health-emergency/
4. ESA: Information & Resource Center (Updated Regularly)
   https://www.esahq.org/coronavirus-covid-19/

IMPORTANT NOTE: Dräger can't give a guidance about the material compatibility of the Dräger PPE with detergents/disinfectant agents others then the tested and approved ones.

Dräger highly recommends to conduct functional tests as specified in the concerned product or service Instruction for Use (IFU) after the cleaning and disinfection process to ensure the functionality of the product for the safety of the user. This is even more important when other detergents are used.
Incidin® Rapid, Sekusept® Cleaner, Neutral Disinfectant Cleaner, Sekumatic® FDR, Eltra® are registered trademarks of Ecolab.
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Subject to changes, status: April 2020