



# Learning about Contamination Control - Part 8: Chemicals in the Cleanroom



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### DISCLAIMER

How chemicals are used within each individual cleanroom are completely dependent on differing standards and specifications.

The need for sterility also depends on your SOP. While it is mandatory for sterile cleanrooms to use sterile cleaning products, non-sterile cleanrooms may or may not need to use them too.

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## Cleaning in the Cleanroom

### Introduction

In this guide we will be looking more in depth at cleaning within the cleanroom. During the cleanroom cleaning process it is highly recommended to use a mix of the following:

- Detergents
- Biocides
- Sporicides
- Alcohols

When and where they should be used will be made clear throughout this guide.

### Chemicals and Gowning

When using chemicals such as detergents and disinfectants it is important to wear appropriate PPE at all times\* (Not only should cleanroom operators keep the cleanroom free from contamination but protecting operators is important too).

Chemicals can be highly dangerous when they come into contact with the skin. While you should always be fully covered and protected in the event of chemicals coming in contact with the skin, you should seek medical help if advised by the manufacturer.

**Note:** All chemical content information can be found in the MSDS found on our website.

\*For information on our full range of PPE, please check out Part 3 of our guides  
**Part 3 - Choosing the Right Cleanroom Garments.**



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## Disinfectants

### What are disinfectants?

A disinfectant is a chemical substance or product that is designed to destroy or deactivate harmful micro-organisms such as bacteria, viruses, and fungi. It is commonly used to eliminate or reduce the risk of infection by killing the micro-organisms present on surfaces, objects or in the air.

There are many different kinds of disinfectants but the ones we will look at in this guide are Biocides and Sporicides.

### Biocides

A chemical substance that destroys, controls or inhibits the growth of living organisms such as bacteria, viruses, fungi and algae.

**Examples:** Chlorine compounds, quaternary Ammonium compounds, Phenols, Formaldehyde, Peroxygen compounds, Organophosphates and Isothiazolinones.

### Sporicides

A specific type of biocide that is designed to kill or inactivate spores. Spores are highly resistant forms of certain micro-organisms.

**Examples:** Hydrogen Peroxide, Peracetic Acid, Ethylene Oxide, Glutaraldehyde, Formaldehyde and Chlorine Dioxide

### Usage of disinfectants

Disinfectants can be used regularly depending on the classification and SOP of your cleanroom. This should be used in combination with rotational cleaning.

Rotational cleaning is alternating between these two different types of disinfectants each time you clean, for example, using a biocide one week/month and then using a Sporicide the other. This ensures that the infectants don't get used to the same disinfectant being used every time and overall maximizes effectiveness.\*

\*For information on cleaning processes, please check out Part 7 of our guides  
**Part 7 - Keeping your Cleanroom Clean.**

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## Detergents

### What are detergents?

As part of your contamination control plan you should be using not only disinfectants, but you should also be using a detergent. Whichever one you use all depends on your specifications or SOP.

These are a more general use chemical and while disinfectants are used every week/month, these can be used on a more regular basis.

### Usage of detergents

Detergents are used daily as part of your contamination control plan. You should not only make sure to clean down the cleanroom at the end of each working day, you should also make sure to clean down between individual jobs too.

The main aim of these clean downs is to eliminate particles and contaminants other than just infectants. Without these regular cleans you are at a high risk of contamination within your critical area, especially during the process of moving equipment and operators in and out the cleanroom.

## Alcohol

### What is an alcohol solution?

Alcohol solutions are made from a mix of alcohol and water. They are the least expensive option out of all chemical solutions, yet, are still highly effective.

Some benefits of using alcohols is that they leave low residue and dry quickly.

### Usage of alcohols

Alcohols are to be used in combination with detergents as well as during small cleaning jobs such as cleaning spilt liquids. Using alcohol disinfectants regularly averts the risk of overusing and running out of detergents.

Alcohol solutions should be used in all cleanrooms where it is safe to use them. They are an excellent general cleaning solution.

## Types of Chemicals

### Disinfectant and detergent styles

There are many variants of chemicals you can choose from. Each of them have their own benefits and which one you choose depends on specifications. The majority of critical environments will include all three.

These include:

#### Wipes

Wipes are useful when cleaning down surfaces within a critical environment. They can come in various styles which each have their own unique features and benefits.\*

Wipes are one of the most commonly used cleaning consumables because they are easy to use and store. Having a packet or tub of wipes within your critical environment at all times is highly recommended.

#### Spray

Sprays are an alternative to pre-saturated wipes and are used with dry wipes.

Whether you use pre-saturated wipes or a spray and a dry wipe, both styles of chemical can be used in the rotational and daily clean process.

#### Solution

A solution is used mainly in larger deep cleans, however, it can also be used in daily cleaning. The solution is usually used in combination with mops for cleaning floors, walls and ceilings.

Solution comes in two different styles: concentrated and ready to use. While both have their own strengths and weaknesses, it is down to the user's personal preference which one they use.



\*For information on what wipes we offer, please check out Part 6 of our guides  
**Part 6 - Choosing the Right Wipe.**

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### Concentrated vs ready to use

The difference in using either concentrated or ready to use solutions is down to the confidence of the user.

Concentrated solutions can go further with up to 25 times more solution compared to ready to use solutions. However, if mixed incorrectly you run the risk of using too much or too little, therefore making the solution ineffective.

Ready to use solutions don't go as far as concentrated, yet, they are more convenient and can save time within the cleaning process.



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