

WHAT IS A CLEANROOM?

At Nordell, we are very proud of our cleanroom manufacturing facilities.

Working with companies from a wide range of sectors, we utilise our cleanroom for several of our clients require parts manufacture in a cleanroom environment.

But what is a cleanroom, and why can they be essential for the manufacturing process?

In this blog, we'll explore what a cleanroom is, how it functions, and the benefits it offers across different industries.

Understanding Cleanrooms

What Is A Cleanroom?

Let's start with the basics.

A cleanroom is a specially designed and controlled environment that minimises the presence of pollutants contaminants such as dust, airborne microbes, aerosol particles, and chemical vapours.

The primary objective of a cleanroom is to provide a contamination-free space for manufacturing and assembling products that require high levels of cleanliness.

Key Features of Cleanrooms

Cleanrooms are characterised by a few key features:

- **Controlled Environment:** Temperature, humidity, and pressure are carefully regulated.
- **Filtration Systems:** High-efficiency particulate air (HEPA) filters are commonly used to remove airborne particles.

- Airflow Management: Laminar airflow systems ensure a consistent flow of filtered air.
- Strict Protocols: Personnel must follow stringent procedures, including wearing special protective clothing to prevent contamination.

The Importance of Cleanrooms

Industries That Rely on Cleanrooms

Cleanrooms are vital in several industries where even the slightest contamination can lead to significant issues. These industries include:

- Pharmaceuticals: Ensuring the sterility of drugs and medical devices.
- Semiconductors: Manufacturing delicate and precise electronic components.
- Biotechnology: Conducting research and developing new biological products.
- Aerospace: Assembling and testing critical aerospace components.
- Food and Beverage: Maintaining hygiene standards for food processing.

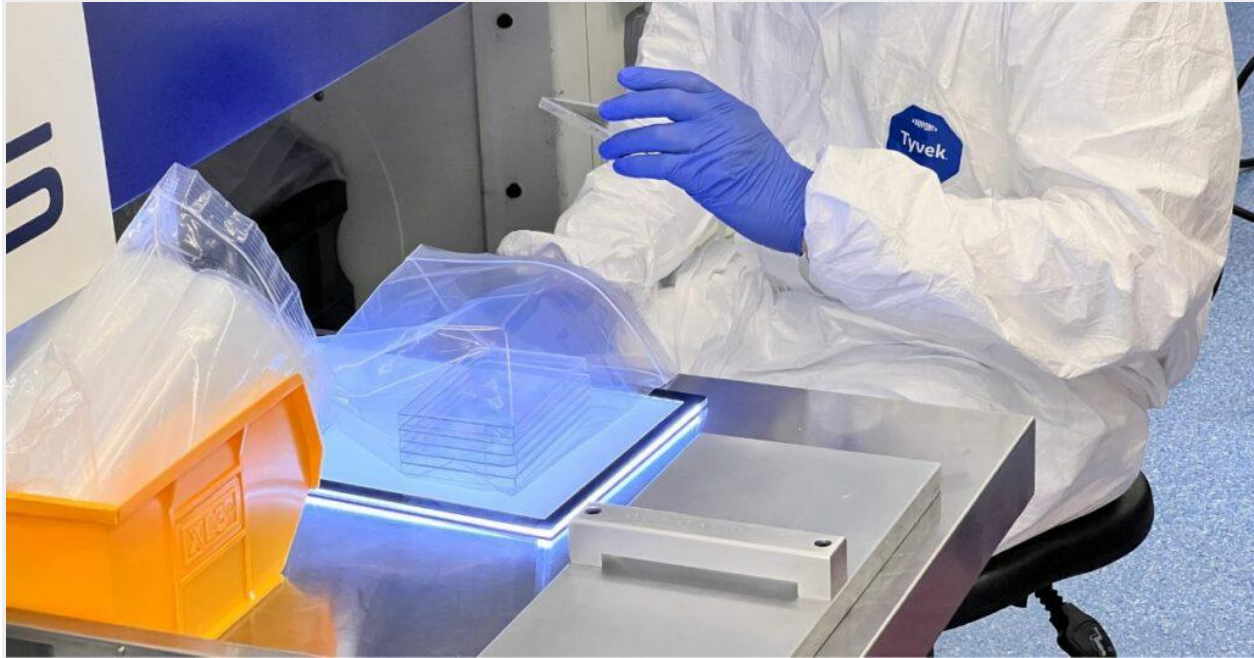
If you're wondering if our cleanroom technology could benefit your product, read more about your [cleanroom environment](#).

Benefits of Using Cleanrooms

The use of cleanrooms provides numerous benefits, including:

- Enhanced Product Quality: By minimising contaminants, cleanrooms ensure higher quality products.
- Compliance with Standards: Many industries have strict regulatory standards that cleanrooms help meet.

- Increased Efficiency: Controlled environments reduce the risk of defects and contamination, improving production efficiency.
- Safety Assurance: Cleanrooms contribute to product safety and reliability, particularly in the healthcare and technology sectors.



Cleanroom Classifications

Cleanroom Standards

Cleanrooms are classified based on the number of particles per cubic meter.

The [International Organization for Standardization](#) (ISO) defines the most commonly referenced standards, which range from ISO Class 1 to ISO Class 9.

ISO Class 1: The cleanest, with the least number of particles.

ISO Class 2 - 5: Used in industries requiring extremely low contamination levels.

ISO Class 6 - 8: Suitable for most pharmaceutical and biotechnology applications.

ISO Class 9: The least strict, still significantly reducing airborne particles compared to a regular environment.

Nordell's ISO 7 Cleanroom

At Nordell, we maintain an ISO 7 cleanroom, which is tailored to meet the needs of various industries, including pharmaceuticals and medical.

An ISO 7 cleanroom allows for a controlled environment with a maximum of 352,000 particles ($\geq 0.5 \mu\text{m}$) per cubic meter, ensuring that your products are manufactured in an optimal setting free from contaminants.

You can read more about our [cleanroom standards](#).

Implementing Cleanrooms at Nordell

At Nordell, we understand the critical importance of maintaining pristine environments for our clients' manufacturing needs.

Our ISO 7 cleanroom is designed to meet stringent standards, ensuring your products are produced in a contamination-free environment.

Whether you're in the pharmaceutical, medical, or any other industry that demands exceptional cleanliness, Nordell's cleanroom solutions are tailored to support your quality and compliance requirements.

Conclusion

Cleanrooms play an indispensable role in various industries.

They provide controlled environments that minimise contamination and ensure the highest quality standards.

Understanding what a cleanroom is and its benefits can help businesses make informed decisions about their manufacturing processes.

We are committed to delivering cleanroom solutions at Nordell to help our clients achieve excellence in their respective fields.

By optimising our cleanroom environments and adhering to stringent protocols, we ensure that our clients receive the best possible support for their product manufacturing needs.

If you have any questions or need more information about our cleanroom services, please feel free to contact us.