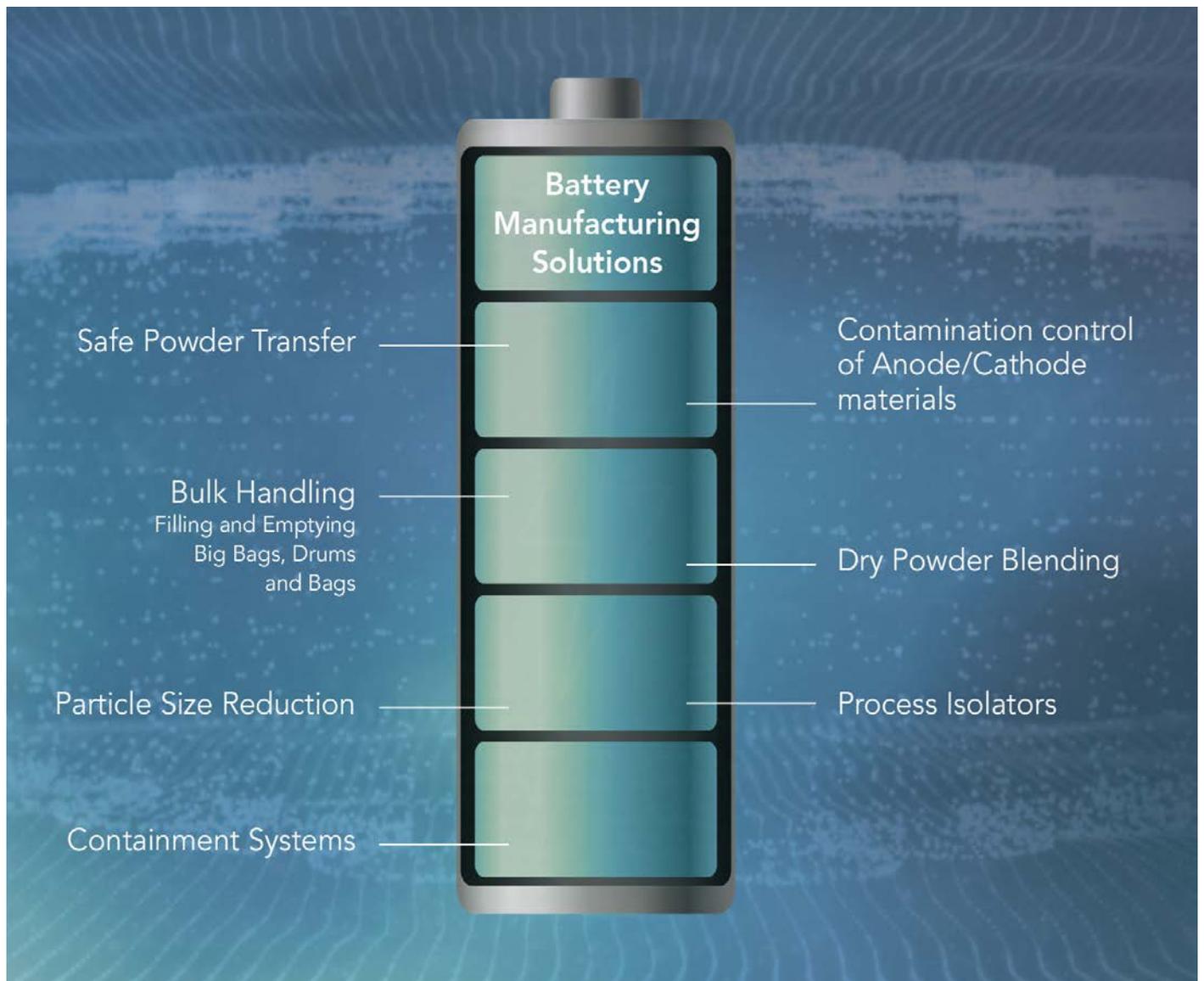




Battery Manufacturing Safe Production Solutions

Raw materials such as lithium, graphite, cadmium and other minerals used in battery manufacturing require excessively safe handling and processing systems in order to protect operators and keep the ingredients uncontaminated.

For 35 years, Dec has been at the forefront of safety-focused handling, conveying and processing technologies for powder materials and offers a large number of solutions to support the battery manufacturing industry in the field of contained powder handling.



Company Profile

“We are a leading global provider of handling and process containment systems to all industries that process powder.”

From the raw material handling to the final product packaging process, Dec acts as a global player throughout the production chain.

In excess of 600 companies worldwide have successfully integrated thousands of Dec systems into their production sites. These include a wide range of patented products always enhancing safety, hygiene, containment and productivity.

Dec offers innovative approaches across the range of

powder handling and process containment applications, including transfer, micronizing/milling, bulk handling, sampling, blending, dosing, aseptic solutions including fill-finish, process isolators and advanced cleaning (CIP/SIP) features.

700 people work on contributing to the success of the group with a global coverage of over 60 countries by an international network of agents oriented to providing local customer support and service.

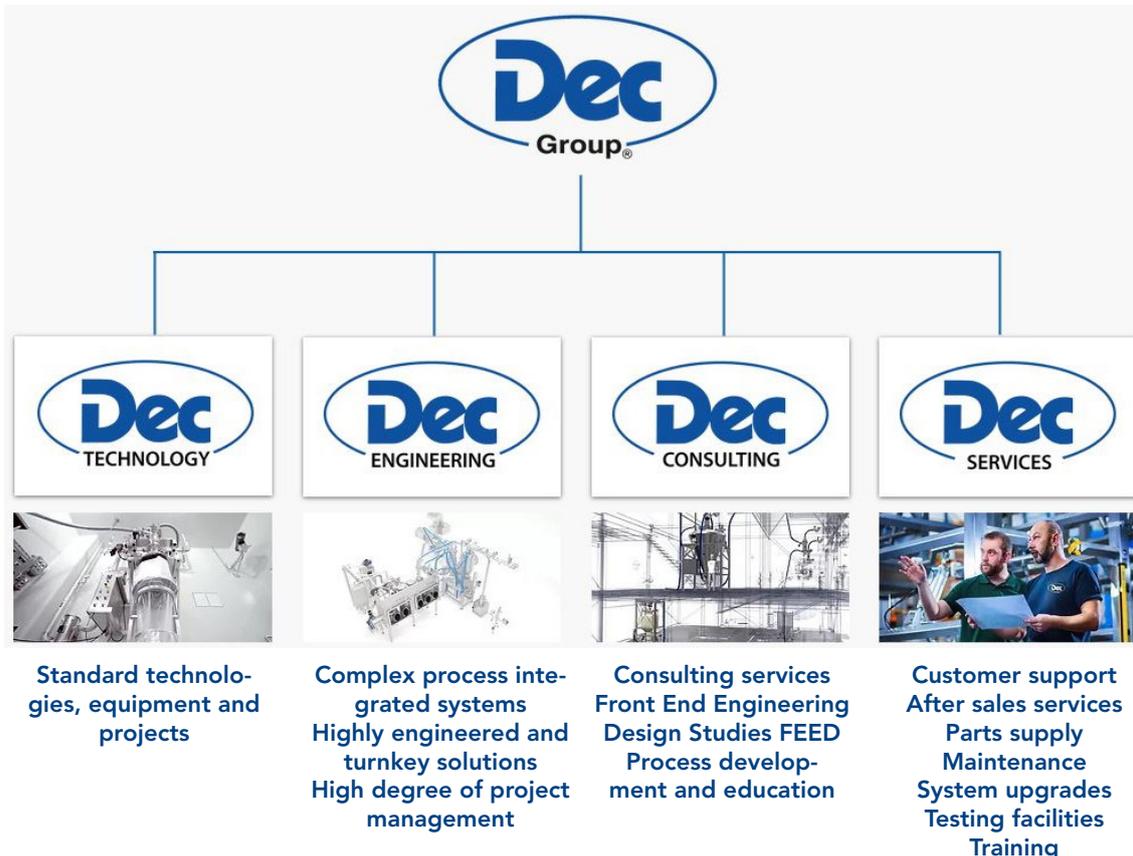
[> Dec Group History](#)

[> Overview of Dec Group Worldwide](#)

**>95%
Global exports**

**Subsidiaries
&
Agents worldwide**

**1987
Foundation**





PTS Powder Transfer System®

Active Powder Handling - safe and efficient

Materials like cobalt, lithium, etc. have various properties that require special attention. Dedicated technologies are essential to handle corrosive, flammable, abrasive and toxic powders in a fully safe and contained manner. With its unique transfer technology, Dec has created the ideal conditions for safely conveying and handling metal powder.

PTS technology makes it possible to interconnect the various process steps safely and completely closed. Not only are the operators and the working environment protected, the properties of the materials are not changed either.

[Read More](#)

- Using both vacuum and pressure to move materials
- Low velocity transfer (1 - 3 m/s), continuous dense-phase flow
- Handles a large variety of different powders and quantities, from mg to tons
- Eliminates gravity charging
- Enhanced capacity due to its unique flat filtration design
- Reliable and safe handling of very fine (< 1 micron), cohesive and wet powders (above 50% humidity)
- Highly contained process (< 1µg/m³), easy to clean and safe handling of explosive materials (MIE < 1 mJ)
- Conveying under high temperature (150 °C)
- Explosion proof
- Fully CIP

PTS Cleaning

- Cleaning in place by transferring liquid
- No disassembly required
- Rapid system drying by means of vacuum
- Possibility to add a spray nozzle in the chamber for non soluble and sticky products





Powderflex

Powderflex allows for continuous conveying and dosing of small to medium quantities of materials. Powderflex handles powder in the same manner as a peristaltic pump handles liquid.

- System for conveying and dosing powder with high precision (+/- 1-2%) over a distance (> 50m)
- Automatic adjustment of the transfer capacity
- Highly reliable, few moving parts, requires little maintenance, hence can be operated non-stop 24h
- Economical system allowing to create dosing stations with many different products
- Compact, mobile, easy to dismantle
- Easy to clean, CIP/SIP

[Read More](#)

Dosing / Dispensing

Whether dosing metallic powders from to FIBCs and IBCs, bags, drums and process equipment, Dec has a range of efficient dosing solutions. Automatic multiproduct dosing without cross-contamination.

Click for more information:

- [Loss in weight](#)
- [Positive weighing](#)
- [Powderflex, continuous dosing](#)
- [DosiValve/PTS combination](#)
- [Microdosing](#)





Big Bag Discharge & Filling Stations

Dec provides a large range of big bag handling solutions. Modular design for equipment solutions perfectly adapted to product characteristics and containment needs.

Discharge

Filling



Docking Systems

Dec provides a range of different docking systems always adapted to the required process. From the simple dust-free to the new SafeDock® system for simplified and fast docking to highly contained DCS Docking offering primary and secondary containment.

[Read More](#)



Suction Hoppers

From the standard suction hopper to models with lumpbreaking functions with or without fluidization, Dec has a range of different suction hoppers specially adapted to your process requirements.

[Read More](#)



DCS® Drum Containment System

The simple solution to high containment issues

- Emptying or filling of single or double liner drums of various sizes
- Protects operator and environment
- Optimal visibility inside the drum due to the top window
- Works in combination with the PTS Powder Transfer System®
- Compact and mobile
- High containment ($< 1\mu\text{g}/\text{m}^3$) with primary and secondary containment
- ISO 6 class internal for product protection
- No drum lifting or tipping required
- Partial emptying of drums and accurate dosing possibilities when using load cells
- Easy cleaning procedure

Drum Emptying

Drum Filling

Other Bag/Drum Emptying and Filling Systems

Contained and safe discharge of bags

- Various designs for non potent to highly active powders
- Hygienic design CIP
- In combination with safe PTS transfer
- Various hoppers depending on product
- Ergonomic design

Click for more information:

- [Sack Tip Cabinet - \(emptying\)](#)
- [Isocharge \(bags&drums\) - \(emptying\)](#)
- [Isotube \(drums\) - \(emptying\)](#)
- [Continuous Liner System \(filling\)](#)
- [IBC Handling \(filling-emptying\)](#)



Particle Size Reduction

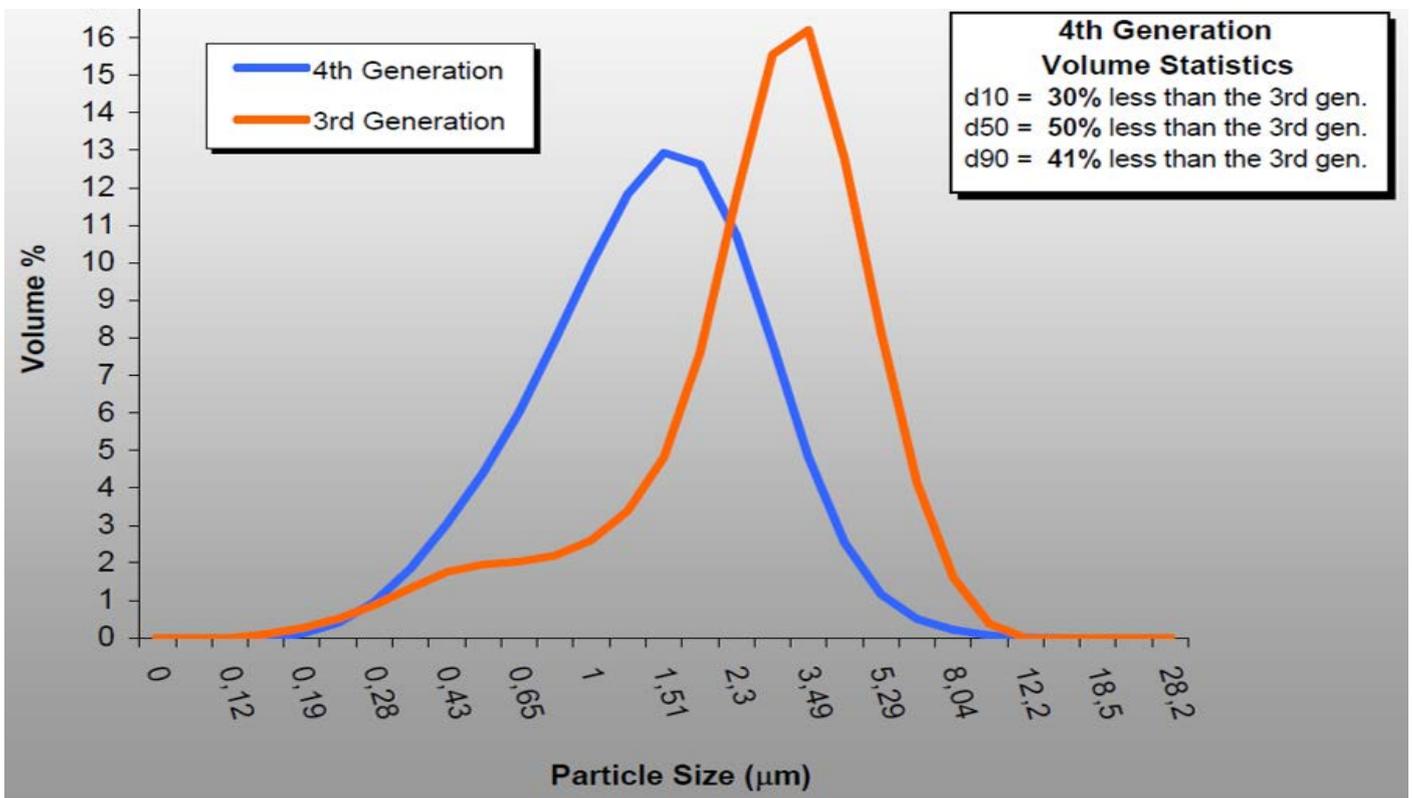


MC DecJet® Spiral Jet Mills

Dec's flexible, multi-format new generation jet milling equipment is designed to satisfy the full range of customer requirements. Available in open or contained arrangements our spiral jet mills provide the ability to micronize difficult and hard to handle products.

- Single pass technology
- Narrow Particle Size Distribution (PSD)
- Designed to reduce issues with sticky products
- Optimized product recovery rates
- Integrated nozzles prevent errors during installation and/or leaks during process
- Easy to clean
- Effortless to assemble, no tools required
- Easy integration into glove boxes and isolators

[Read More](#)





PTS Batchmixer®

This new revolutionary mixing technology for homogeneous blends offers flexibility to swiftly mix powders with different characteristics.

- High containment powder mixer
- No rotating or moving parts
- Handles toxic and explosive powders
- Efficient mixing < 0.1 %
- Self-filling, full discharge
- High turn down ratio
- Minimal maintenance
- Active powder transfer to and from the mixer
- CIP
- Various options available: load cells, mobile unit, etc.

[Read More](#)

Sampling

Various sampling devices from the vacuum type MPTS to more mechanical systems to draw inline samples directly from equipment such as mixers or jet mills.

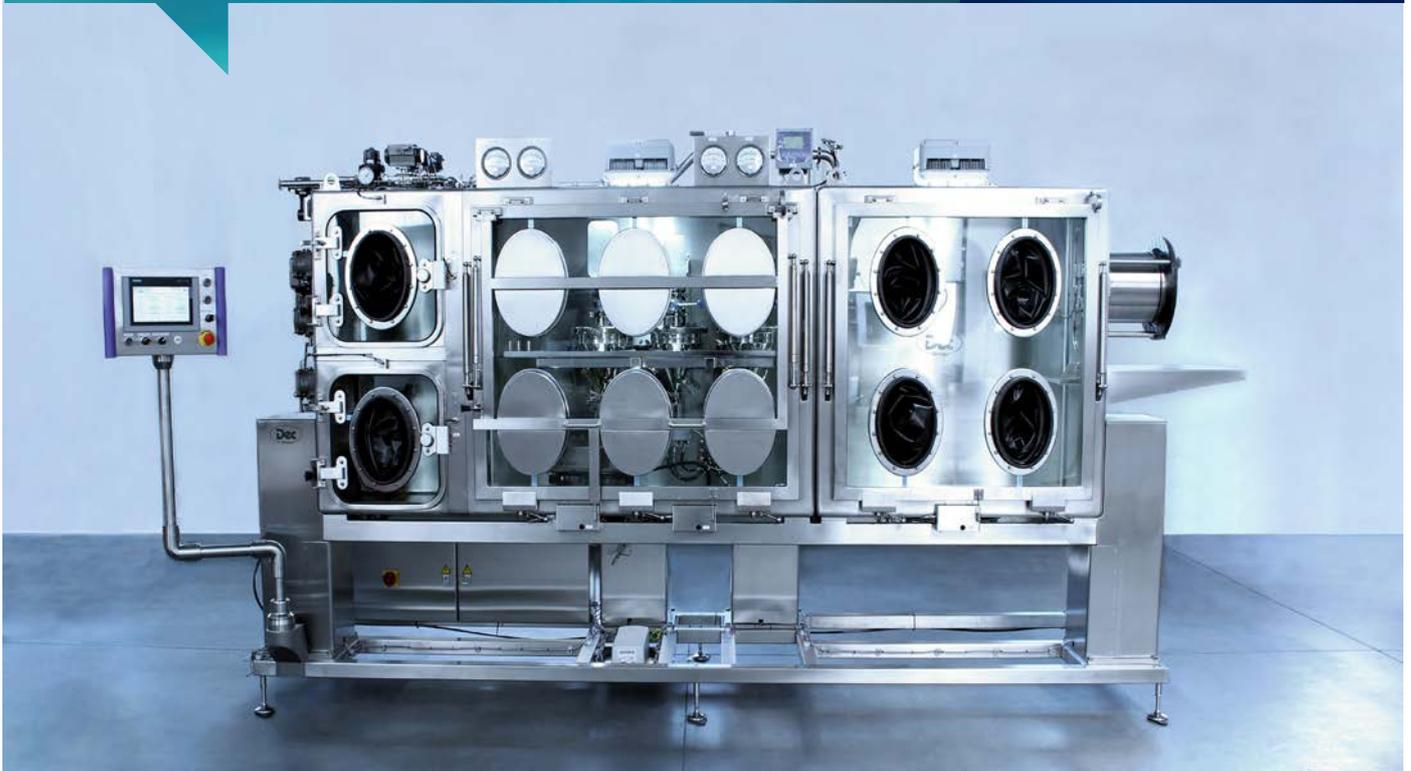
The selection of the sampling technology will be determined according to the type and the conditions of the process from which you need samples, the level of containment to be achieved as well as economical aspects.

Click for more information:

- [MPTS Sampling Device](#)
- [Mobile MPTS](#)
- [DCS Drum sampling](#)
- [Piston/spoon/screw type sampling](#)



Process Isolators & Containment Systems



Extensive range of isolator technologies and containment systems which allow flexible and safe handling of powders and a simple integration into multiple production processes.

- Micronizing / Milling Isolator
- Charging Isolator
- Dispensing/Sampling Isolator
- Downflow Booth
- Mobile Clean Room

[Read More](#)

