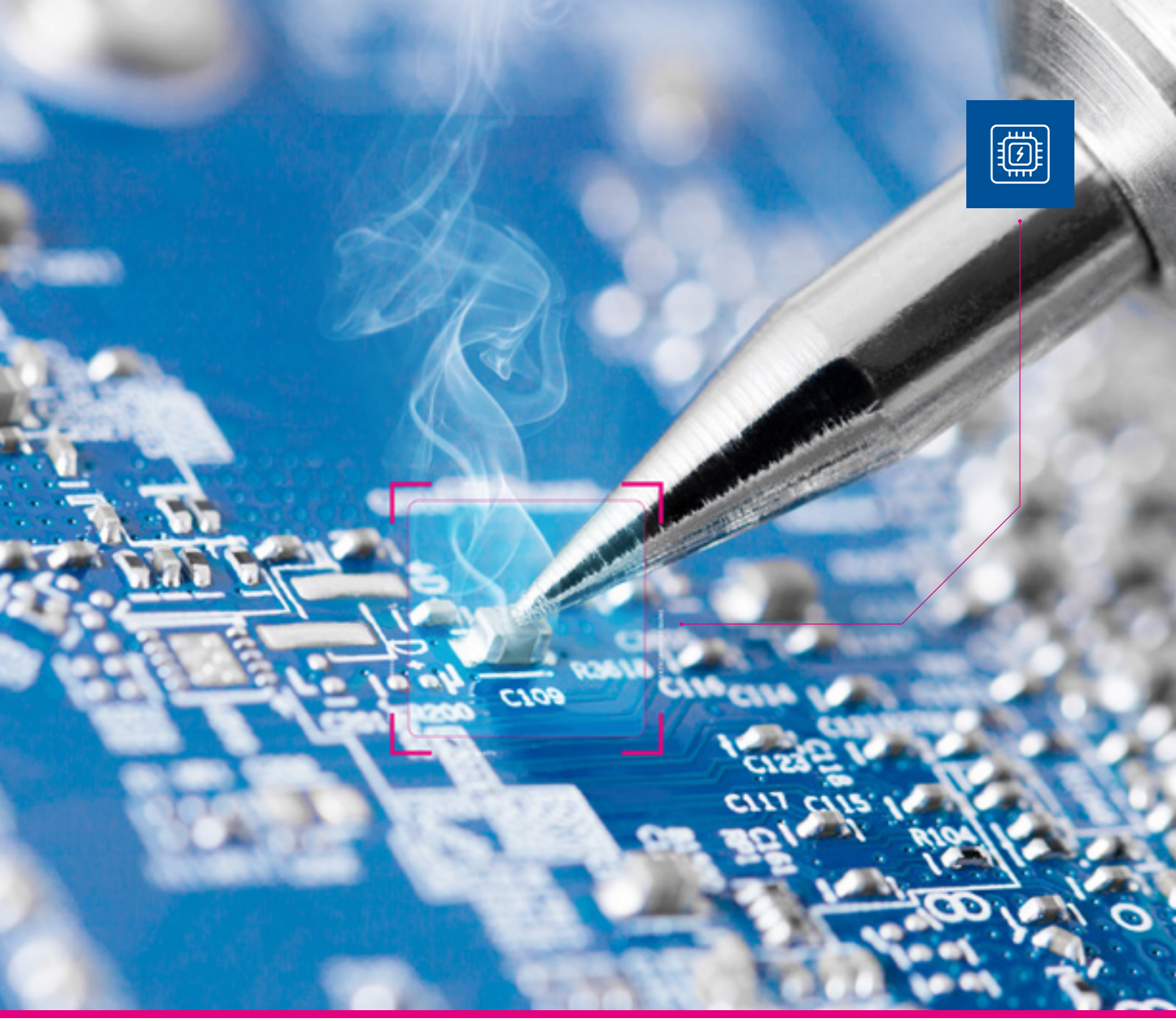


Extraction and filtration technology for electronics production

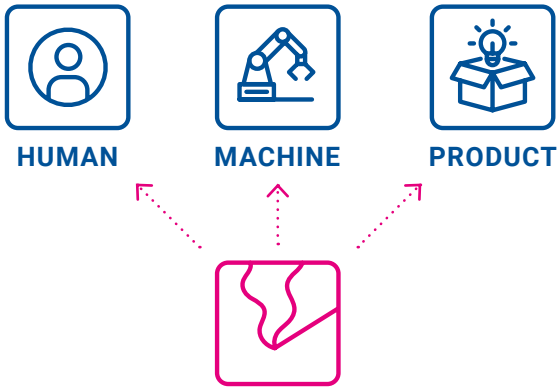
Air pollution control in the manufacture of electronic assemblies and systems

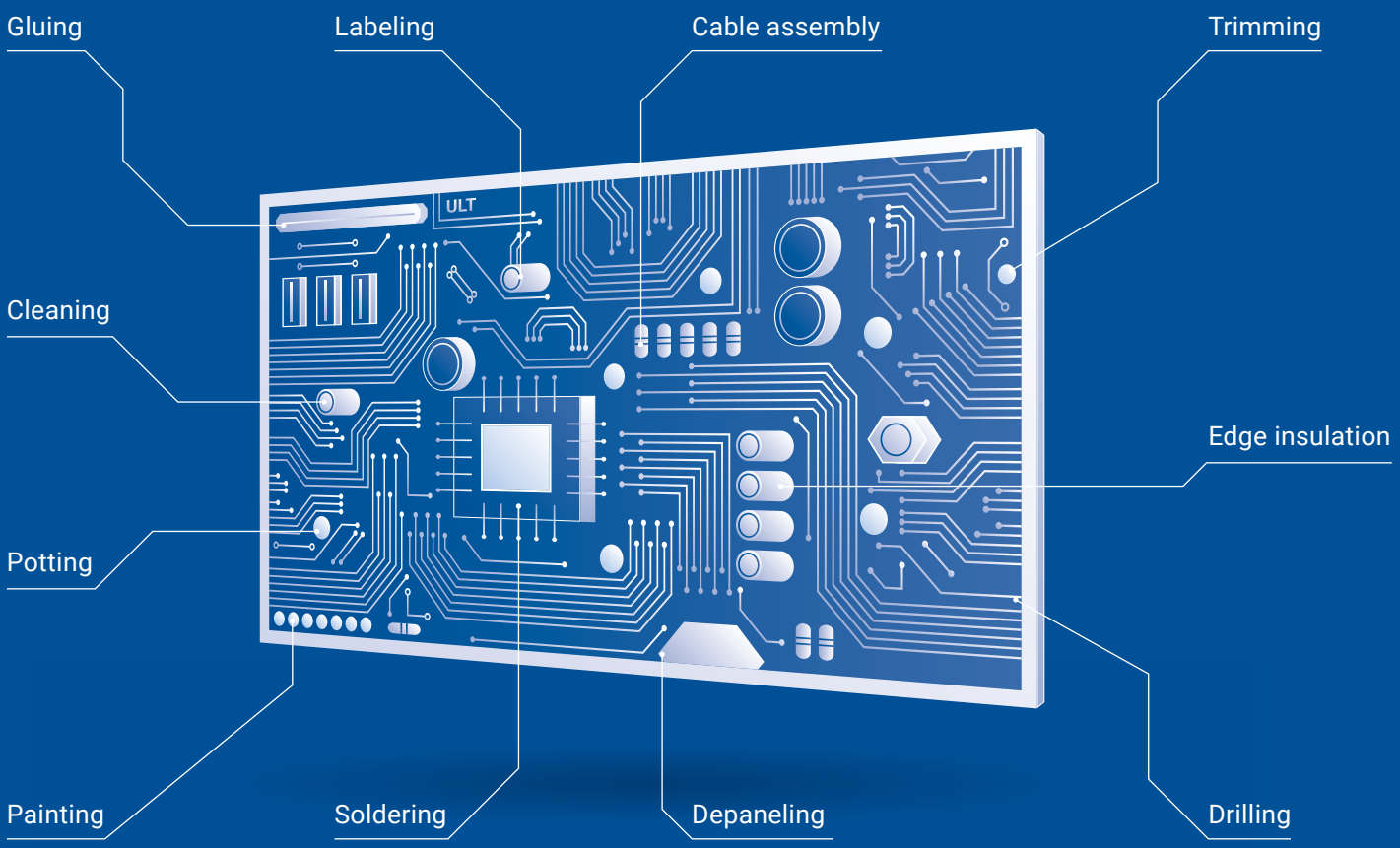
ULT
air quality

Clean air is crucial for electronics production

Clean air is essential in electronics manufacturing. Producing electronic components, assemblies, or systems involves a variety of processes that generate airborne pollutants. These pollutants can harm employees, contaminate equipment, and impact product quality. Therefore, meeting strict air quality standards is crucial for the electronics industry's success.

SOLDERING FUME: A PRIME EXAMPLE OF AIRBORNE POLLUTANTS' TRIPLE THREAT IN ELECTRONICS PRODUCTION





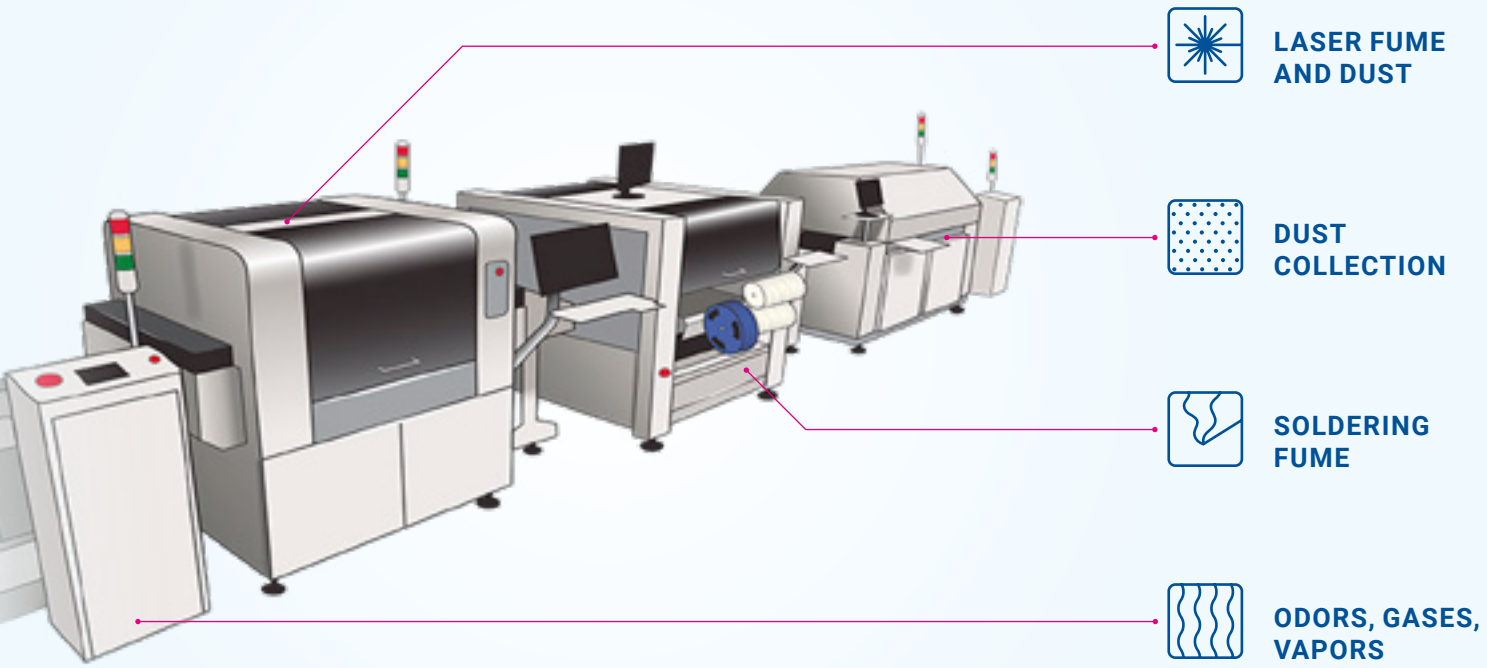
Electronics production – characterized by complex processes

Making printed circuit boards (PCBs) is a complex process involving many different materials and steps. These steps create airborne pollutants that can harm workers and the environment.

AIRBORNE POLLUTANTS IN PCB PRODUCTION INCLUDE:

- Heavy metals like lead, cadmium, mercury, and arsenic can be released from circuit boards, solder, and other materials. These metals are poisonous and can cause respiratory disease, kidney damage, and other health problems.
- Organic compounds like formaldehyde, toluene, and xylene can be released from adhesives, paints, and other chemicals. These compounds can cause cancer, birth defects, and genetic damage.
- Dust particles like dust, smoke, and soot can come from different sources, such as cutting circuit boards, soldering, and cleaning. These particles can cause respiratory irritation or illness.

ULT offers comprehensive solutions for every step of electronics production where top air quality is essential.



Airborne pollutants in electronics production

Laser fume

Laser fume is an unwanted side effect of innovative laser technology. As a byproduct of many applications in electronics manufacturing, laser smoke and dust should always be treated with caution. It's dangerous because:

- It can contain harmful substances, such as dioxins, furans, and heavy metals (lead, cadmium, and mercury).
- It increases the risk of fires and explosions.
- It reduces the quality of electronic products as it can cause contamination and defects.
- It can contaminate laser systems and therefore affect processing quality.

LASER FUME AND DUST ARE GENERATED DURING THE FOLLOWING PROCESS STEPS:

- Laser marking
- Depanelling
- Laser soldering
- Cable assembly
  [Stripping, Labelling]
- Trimming
- Structuring
- Edge insulation

ULT offers a comprehensive range of mobile and stationary extraction systems for the removal of laser fume and dust.

ULT SOLUTIONS FOR LASER FUME EXTRACTION

Soldering fume

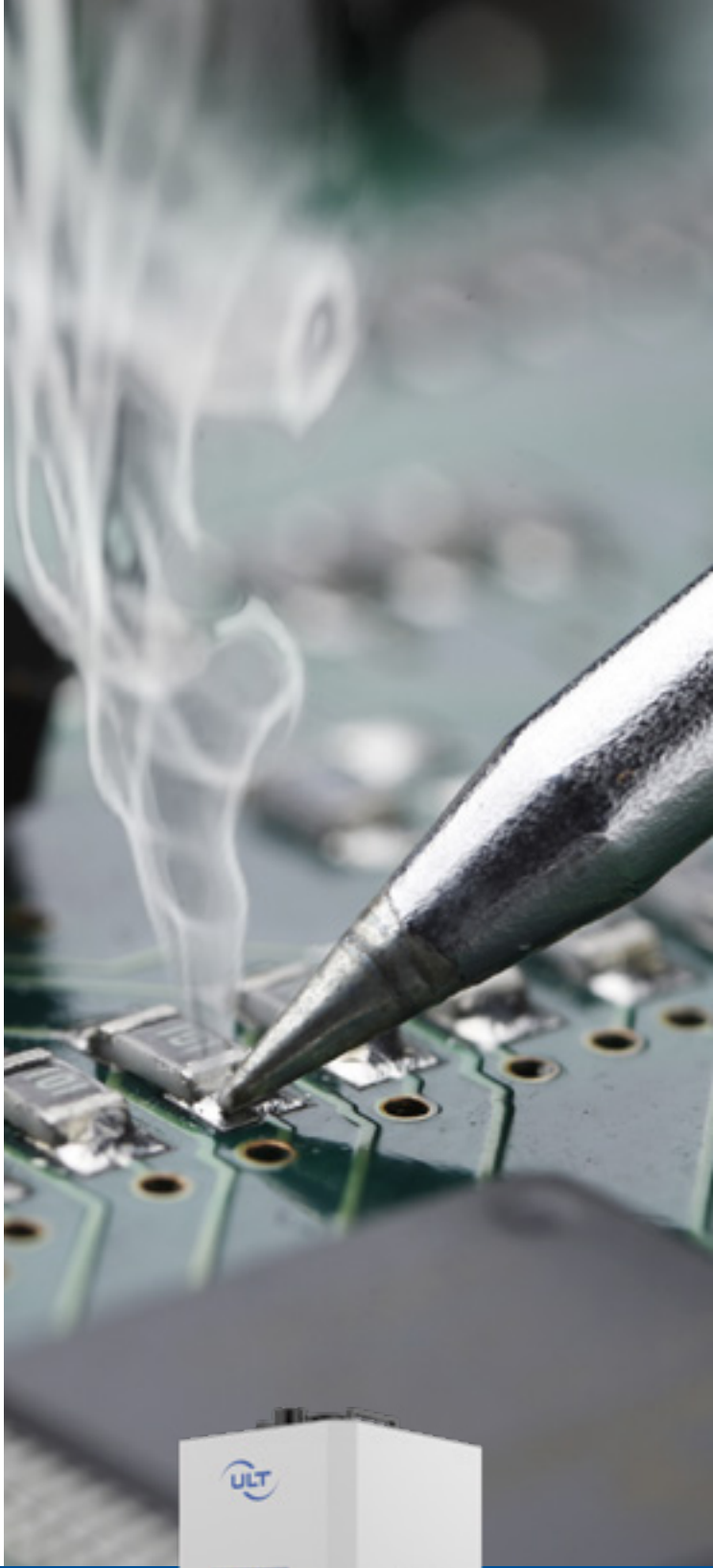
Soft soldering processes are widely used in making electronic assemblies. These processes create very fine soldering fumes (sometimes called soldering vapors) that must be removed because:

- It may contain harmful substances such as lead, tin, rosin, amines, formaldehyde, phenol, hydrogen chloride, and carbon monoxide.
- Long-term exposure to soldering fumes can lead to health problems such as cancer, respiratory diseases, and neurological disorders.
- It increases the risk of fires and explosions.
- It can negatively impact product quality.

SOLDERING FUMES AND VAPOR ARE PRODUCED DURING THE FOLLOWING PROCESS STEPS:

- Soldering
- Wave soldering
- Reflow soldering
- Vapor phase soldering
- Laser soldering
- Light soldering
- Selective soldering
- Dip soldering
- Manual soldering

ULT develops and manufactures technologically advanced, low-noise extraction systems for removing soldering fumes.



ULT SOLUTIONS FOR SOLDER FUME EXTRACTION

Vapors, odors, gases

Odors, vapors, and gases found in electronics manufacturing contain:

- Heavy metals such as lead, cadmium, and mercury
- Organic compounds such as dioxins, furans, and formaldehyde
- Gases such as carbon monoxide, hydrogen chloride, and sulphur dioxide

They can cause health problems such as cancer, respiratory diseases, and neurological disorders, and they can also negatively impact manufacturing and product quality.

ODORS, VAPORS, AND GASES ARE PRODUCED DURING THE FOLLOWING PROCESS STEPS:

- Vapor phase soldering
- Labelling by printing
- Painting/ conformal coating
- Potting
- Cable assembly [Labelling]
- Trimming
- Structuring
- Flux
- Cleaning with solvents
- Dosing
- Gluing
- Edge insulation

ULT offers users a wide range of high-availability extraction systems that use adsorption filters.

FILTRATION SYSTEMS FOR VAPORS, ODORS, GASES

Dust and smoke

The following dust and fine dusts can occur in electronics production:

- Metal dusts of copper, tin, lead, aluminum
- Plastic dust from GRP materials, epoxy resins, and polyethylene
- Organic dusts such as rosin and glue
- Fine dust such as soot and ash

They are problematic because they:

- Can cause health issues such as respiratory diseases, cancer, and skin irritation
- Can affect the quality of electronic products
- Can increase the risk of fires and explosions

DUST AND SMOKE ARISE DURING THE FOLLOWING PROCESS STEPS:

- Mechanic depanelling
- Cable assembly
  [Stripping, Labelling]
- Trimming
- Structuring
- Cleaning including fine dust extraction

ULT offers user-friendly extraction and filtration systems controlling air pollution caused by dust and fine dust.

ULT SOLUTIONS FOR DUST CONTROL AND COLLECTION

ULT systems and their typical applications

Extraction and filtration solutions for air purification

ODORS, GASES, VAPORS

LASER FUME AND DUST

DUST COLLECTION

SOLDERING FUME

Additional ventilation options

In addition, ULT offers further comprehensive and technologically well-proven solutions for processes and support operation in PCB production.

IONIZATION

AIR DRYING

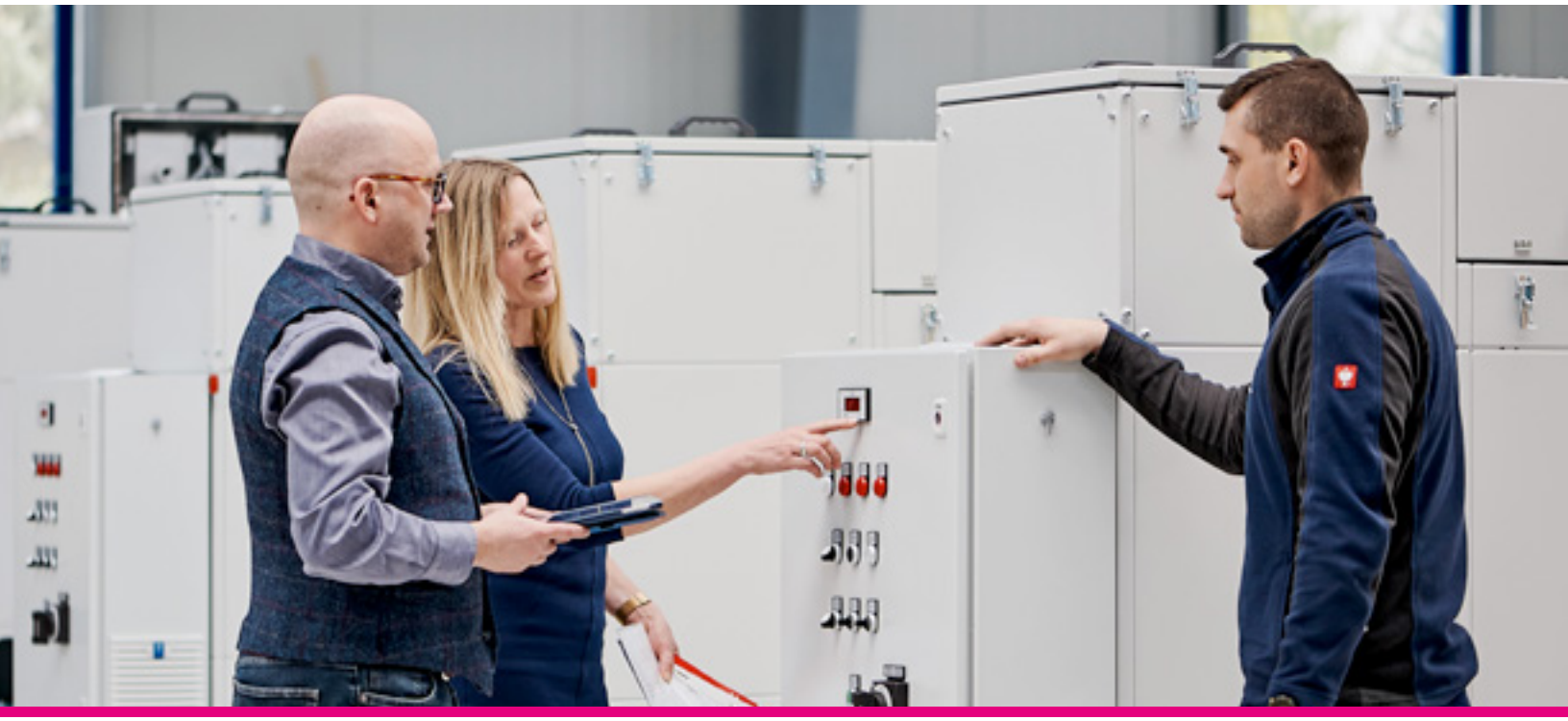
COMPLETE SOLUTIONS

CUSTOMIZED SOLUTIONS

VENTILATION IN ELECTRONICS MANUFACTURING

We are your partner!

Our performance promise



Intelligent solutions for best air quality

ULT – air quality

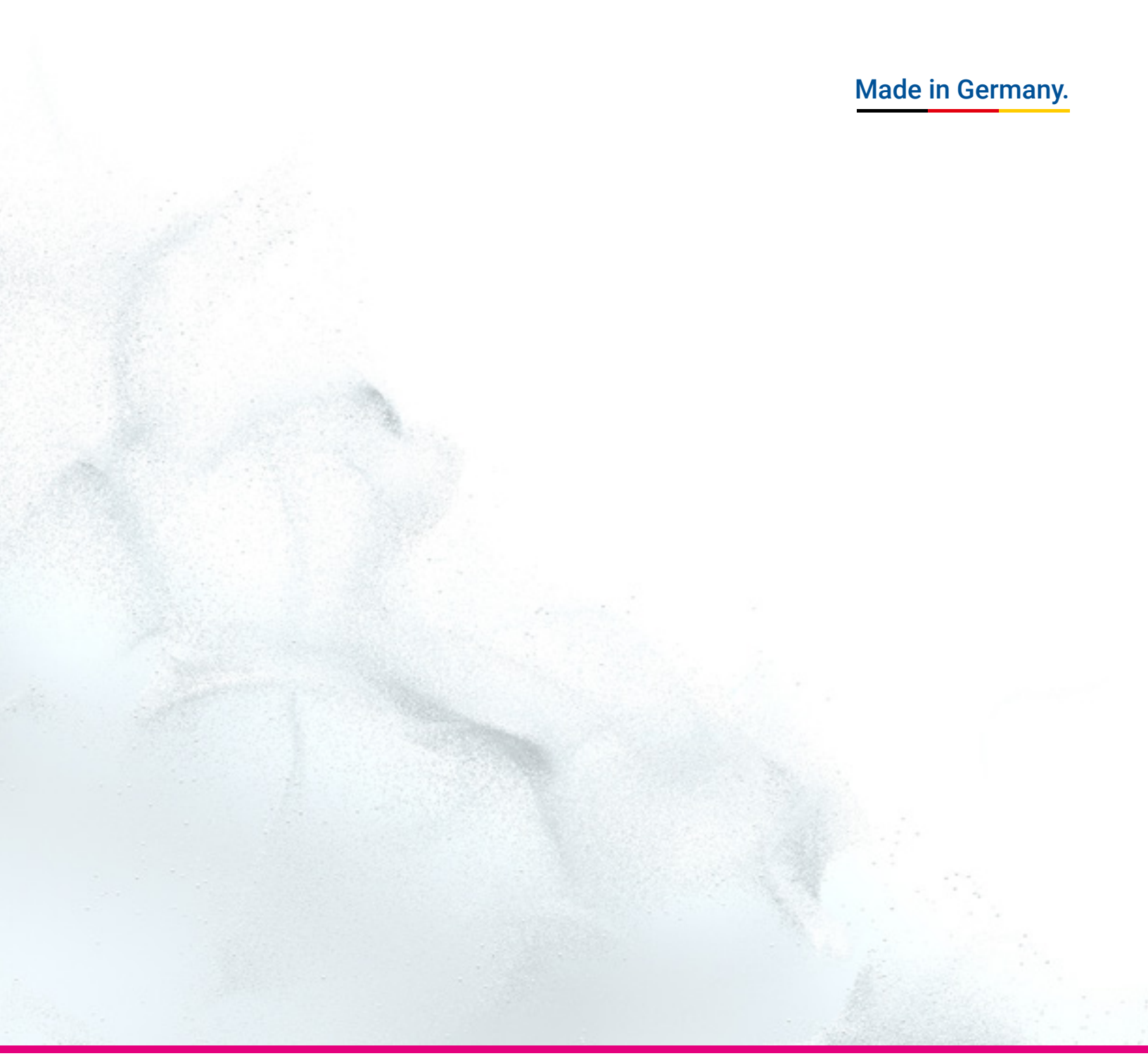
Air quality is essential for work and production processes. As a full-service provider, ULT develops air purification solutions to meet the highest standards, protecting employees, equipment, products, and the environment.

Our reliable products support efficient manufacturing and customer profitability. Because we understand our customers' processes and needs, we can create tailored solutions ranging from standard products to custom systems.

Our in-house research and development team, along with partnerships with industry associations, academic institutions, and businesses, drives continuous improvement in our ventilation systems and air quality solutions for the future.

ULT

Made in Germany.



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