



HUTCHINSON®

We make it *possible*

PARTICLE CLEANLINESS
FOR O-RINGS

ENSURING PERFORMANCE AND LONGEVITY OF THE SEALING CIRCUITS



Particle cleanliness plays a crucial role in the performance and durability of O-Rings. Particles present in circuits can compromise the efficiency of O-Rings. By eliminating these particles, we can guarantee optimum circuit tightness over the long term.

A CONTROLLED CLEANLINESS ENVIRONMENT

The presence of particles in a sealing circuit leads to a significant increase in wear and tear on the system when it is first used, which can lead to irreversible failures (deterioration of mechanical components, sealing problems, etc.).

As a leader in precision sealing and expert in rubber since 1853, Hutchinson has implemented washing and packaging processes that meet the strictest cleanliness requirements of our customers. Our process is based on the use of advanced techniques to effectively reduce particulate contamination, while respecting the environment and preserving the integrity of O-Rings. Particulate cleanliness concerns the entire manufacturing chain, from production to the customer's assembly station.



CLEANLINESS LEVELS

We have defined four levels of cleanliness (standard, intermediate, severe and very severe) to meet the requirements of the major manufacturers. These levels are classified according to four criteria:

1. Maximum gravimetry
2. Maximum size of metallic particles
3. Maximum size of non-metallic particles
4. Maximum size of textile fibers

Cleanliness levels	Maximum gravimetry (mg/1000cm ²)	Maximum size of metal particles (µm)	Maximum size of non-metallic particles (µm)	Maximum textile fiber size (µm)
Standard	16	-	-	-
Intermediate	8	300	1 000	4 000
Severe	4	200	600	2 000
Very severe	2	150	400	2 000

PARTICLE CLEANLINESS PROCESS FOR O-RINGS

DECONTAMINATION

The O-Rings are ultrasonically cleaned and sprayed in a clean room, eliminating any particulate contamination.



WASHING AND PACKAGING IN ISO 7 CLEAN ROOMS

After decontamination in a clean room, the O-Rings are washed and dried to the required level of cleanliness.

They are then packed in double bags. These stages take place in an ISO 7-certified clean room, where it is compulsory to wear a cap, gown and overshoes.



Our In-House cleanliness measurement laboratories comply with the recommendations of ISO16232 version 2018 and VDA 19.1. They are inspected according to a defined schedule.

ONE-PLANT CONCEPT

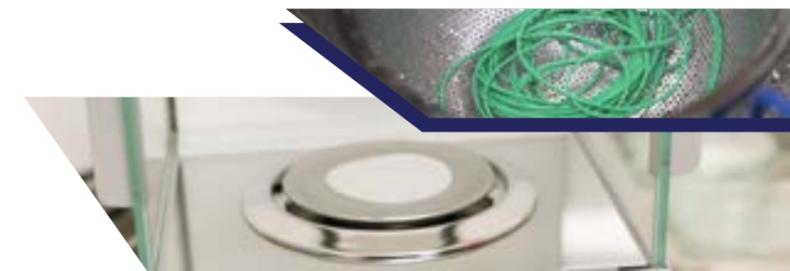
The two O-Ring production sites in Europe, Château-Gontier (France) and Campo Maior (Portugal), are equipped with the same washing facilities and ISO 7-certified clean rooms (in accordance with ISO 14611-1).



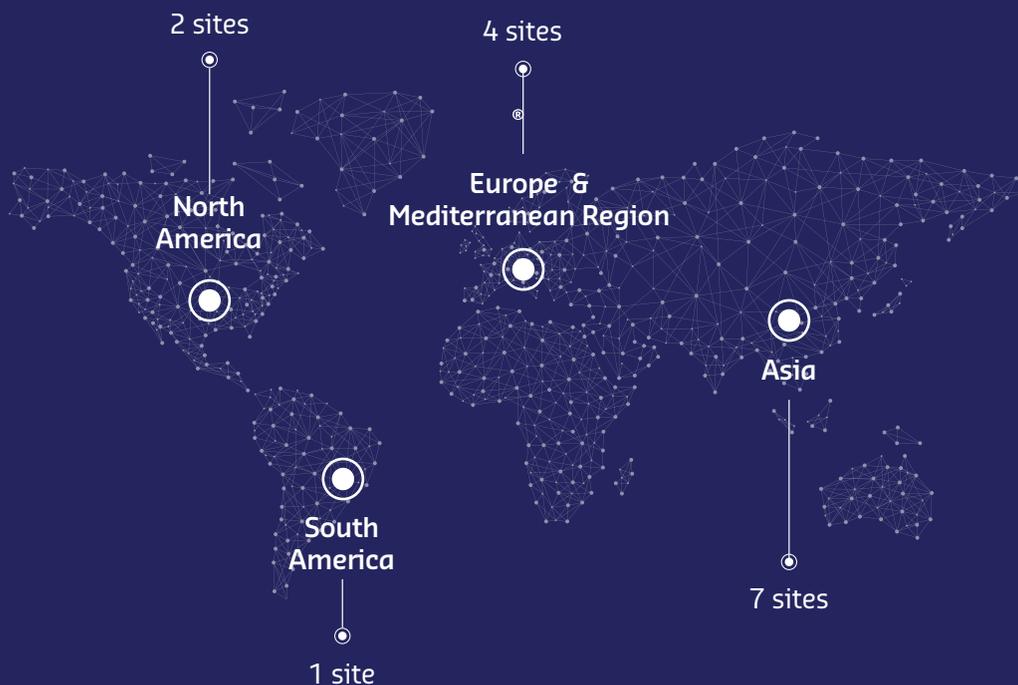
ISO 7 clean room packaging
Plant of Château-Gontier-sur-Mayenne, France



ISO 7 clean room packaging
Plant of Campo Maior, Portugal



HUTCHINSON® O-RINGS & BONDED SEALS SITES AROUND THE WORLD



ABOUT US

Leading manufacturer of sealing solutions, Hutchinson® designs, develops and manufactures standard and tailor-made solutions: O-Rings, X-Rings, Bonded Seals and shape seals.

We manufacture our rubber compounds from various family of elastomers in our own laboratories and compounding installations, guaranteeing consistent quality at the highest level. We have a wide range of approved elastomer compounds for different markets.

Hutchinson® is present throughout the world, close to its customers and responds to the needs and requirements of industry.



www.oring.hutchinson.fr/en

CONTACT

EUROPE

Château-Gontier - FRANCE
 oring.auto@hutchinson.com
 oring.industry@hutchinson.com

Mannheim - GERMANY
 info.mannheim@hutchinson.com

NORTH AMERICA

Auburn Hills, Houston - USA
 Ensenada - MEXICO
 pss.salesna@hutchinson.com

SOUTH AMERICA

Monte Alto - BRAZIL
 precision@hutchinson.com.br

ASIA

Suzhou, Beijing, Maanshan - CHINA
 oring.china@hutchinson.com
 Chennai - INDIA
 oring.india@hutchinson.com
 Tokyo - JAPAN
 oring.japan@hutchinson.com
 Bangkok - THAILAND
 oring.thailand@hutchinson.com
 Seoul - SOUTH KOREA
 oring.korea@hutchinson.com

HUTCHINSON KEY FIGURES



4,8 bn €
turnover



25
countries



5% invested
each year in
research et
innovation



100 sites
around
the world



> 40,000
employees



French
company