



HUTCHINSON®

We make it *possible*

# PRECISION SEALING SYSTEMS

## NUCLEAR



# CONTRIBUTING TO SAFETY NUCLEAR ENERGY



Thanks to our expertise in materials science and engineering, Hutchinson designs and manufactures high-performance sealing solutions that ensure the safety of nuclear installations. From uranium enrichment to waste treatment, our products meet the specific quality standards of the nuclear industry.

## LONG-STANDING PARTNER TO THE NUCLEAR INDUSTRY

For decades, Hutchinson has been an expert in the design and manufacture of highly engineered sealing solutions for nuclear radiation resistant applications.

Our expert teams design standard and custom parts such as inflatable, made up, extruded profile, O-rings, bonded seals, membranes, and molded parts in a wide range of approved rubber components, from standard materials to PMUC materials.

Our solutions are optimised to meet the specific requirements of applications all along the nuclear energy cycle from the uranium enrichment to the storage and waste treatment.

Since the first qualification in 1983, Hutchinson has continuously created and tested products that meet the latest nuclear standards, thanks to its extensive expertise in rubber components.

Our abilities include laboratory material for chemical analysis and new compounds development, CAD design, Finite Element Analysis simulation, aging testing facilities and more.


We cooperate closely with all organisms and manufacturers of the nuclear market in order to provide complete satisfaction through strong technical expertise, product performance, quality, and flexibility.

Certified manufacturing plant:



## DEDICATED COMPOUNDS

- > Compounds complying with specification no. D5710/IMC/1999/007111 on sulphur and halogens content
- > EDF-UTO approved radiation materials since 1983

Reference	Rubber Family	Hardness Shore A	Tolerance to Gamma radiation in Gray*		 <small>Produits et Matériaux Utilisables en Centrales</small> <b>PMUC agreement</b>
			Static conditions	Dynamic conditions	
6EP1830	EPDM	65±5	1x10 <sup>6</sup>	6x10 <sup>5</sup>	17-115
7EP1826	EPDM	75±5	1x10 <sup>6</sup>	6x10 <sup>5</sup>	17-116
8EP1820	EPDM	80±5	9x10 <sup>5</sup>	4x10 <sup>5</sup>	17-117
8DE1825	EACM	75±5	8x10 <sup>5</sup>	4x10 <sup>5</sup>	17-118
7DT1840	HNBR	70±5	9x10 <sup>5</sup>	3x10 <sup>5</sup>	17-121
DF8017	FKM	80±5	3x10 <sup>5</sup>	3x10 <sup>5</sup>	17-122
8EP11033	EPDM	80±5	1x10 <sup>6</sup>	6x10 <sup>5</sup>	17-143
6SL2425	VMQ	60±5	4x10 <sup>5</sup> (a)	2,5x10 <sup>5</sup> (a)	17-371
5SL2424	VMQ	50±5	6x10 <sup>5</sup> (a)	2x10 <sup>5</sup> (a)	17-372
EP7097	EPDM	75±5	1x10 <sup>6</sup>	4x10 <sup>5</sup>	17-0375
EP8517NG	EPDM	80±5	7,5x10 <sup>5</sup> (a)	6x10 <sup>5</sup> (a)	17-0392

\*Please refer to irradiation data sheets (available on request)

(a) 1- Doses absorbées : 100 Gy - 1 kGy - 10 kGy | Débit de dose 100 Gy/h±15%  
 2- Doses absorbées : 100 kGy - 1 MGy - 2,5 MGy | Débit de dose 4 à 5 kGy/h ±15%

## OUR SOLUTIONS

We develop a large range of sealing solutions tailored to the specific needs for civil and military nuclear applications. Our products are manufactured with radiation-proof and PMUC certified materials.



### MEMBRANES

- > Textile reinforced
- > Radiation proof & PMUC agreement
- > Longer service life
  
- > Applications: isolation solution for tanks, rolling diaphragm, convolution seals...



### MADE UP SEALS

- > Sealing solutions from rubber sheets or rubber-coated fabrics
- > Wide range of dimensions
- > Products defined by our design team
  
- > Applications: connecting bellows, expansion sleeve, flexible seals for large devices...



### EXTRUDED PROFILE SEALS

- > Made up for all types of gas or fluid transfers under low-pressure or vacuum
- > Large dimensions: up to 100 meters
- > FMEA calculation for profile definition
  
- > Applications: sealing solutions for different systems such as pneumatic, hydraulic, vacuum...



### O-RINGS & BONDED SEALS

- > O-Rings, JF4 Sealing Rings, Bonded Seals,...
- > Wide range of dimensions (diameter up to 2.5 meters)
- > Continuous molding process for large dimensions
  
- > Applications: primary and secondary pumps, actuators, sensors...



### MOLDED PARTS

- > Custom designs
- > Available with metal, textile or plastic inserts
  
- > Applications: sealing solutions for heat exchangers, uranium enrichment circuit or radioactive waste storage, isolation plugs for human protection...



### INFLATABLE SEALS

- > All profiles and part shapes
- > All sizes: from 10 cm up to several tens of meters
- > Pressure resistance: -1 to +6 bars
  
- > Applications: cofferdam seals, airlock seals, glove boxes, nuclear waste transport...



## HUTCHINSON PRECISION SEALING SYSTEMS AROUND THE WORLD



## ABOUT HUTCHINSON PRECISION SEALING SYSTEMS

Hutchinson Precision Sealing Systems is a leading manufacturer of sealing solutions.

We design and manufacture static and dynamic sealing solutions, magnetic encoders, foams and composites to meet the most demanding requirements.

Our 160 years of expertise has earned us the trust of major players in the automotive, aerospace, defence, energy, rail and industrial markets.

With 29 sites in 15 countries, Hutchinson PSS employs nearly 7,200 people and has a turnover of more than €591.5M.



[www.hutchinson.com](http://www.hutchinson.com)

## CONTACT

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## ABOUT HUTCHINSON



€3.9 bn  
turnover



25  
countries



5% invested  
each year in  
research &  
innovation



100 sites  
around  
the world



> 38,000  
employees