

MARFRAN.MED

**TPE/TPO
COMPOUNDS**

MEDICAL APPLICATION

MARFRAN.MED®

YOUR PARTNER FOR
HIGH-TECH COMPOUND



Marfran s.r.l. meets the medical and pharmaceutical industry with **MARFRAN.MED®**.

Our innovative solutions made us reliable partner for the development of new products for biocompatible medical device. We produce coloured and transparent TPE compound for injection moulding applications (drip chambers, cover for drip chambers, pierced stoppers, connectors, dental bites, droppers, rollers, blood bags), extrusion applications pipes, tubes, peristaltic pumps), blow moulding (container for ophthalmic preparations, containers for supplements, food bags, drip chambers for hemodialysis).

The transformation processes for MARFRAN.MED® is carried out in a new dedicated clean room, highly automated and subject to cleaning procedures. We have chosen the best technology to guarantee customer's top quality and each compound have to pass strict checks through the Optical Control System.



MARFRAN.MED® COMPOUNDS PERFORMANCE

The MARFRAN.MED® compounds have been tested in an experimental stage both in the normal forms of processing (extrusion, injection molding, blow moulding) as well as in the most demanding processes and micro-extrusion/co-extrusion and micro-stamping.

The high processability allows obtaining semi-finished products characterized by:

- High flexibility, Soft touch.
- Free of PVC, silicone and latex in the entire production chain.
- Very high transparency and medical coloured compound.
- Reprocessable waste.
- Gamma rays, EtO, steam sterilizations allowed.
- On line Optical Control Selection System to select each granule.
- Surfaces with a low coefficient of friction.
- High precision and dimensional consistency.
- Stables working conditions and process.
- High performance in 2K moulding process.
- Short drying process, guarantee of rheological homogeneity of the batch.
- Easy assembly, short cooling times.
- No external migration phenomenon for the oil-free compounds.
- Resistance to the usual fluids used in the medical and pharmaceutical sectors.
- Adhesion to polyolefins with co-extrusion and molding processes, special grades for adhesion to PC, ABS, PMMA, SAN, ASA, PA6.
- No toxic gas generation during the transformation.
- Limited thermal degradation (no black spots, no yellowness) in the normal process range (160°C - 220°C).
- No moisture absorption over time.
- Wide range of operating temperatures (-50°C to 125°C in function of the hardness).

The range of MARFRAN.MED® products finds application in the production of countless semi-finished products dedicated to the medical and pharmaceutical industry.

MARFRAN.MED® is produced in accordance with **ISO 9001** and **ISO 13485** (norm for medical device manufacturing). We certify each compound according to **ISO 10993** (guideline for Biocompatibility Safety Assessment of Medical Devices for body) and **USP Class VI** (United States Pharmacopeia standards for quality, purity, strength and consistency) – we have passed the top Class VI because our compound exhibits a very low level of toxicity by passing all of the tests requirements).

We have also tested our compounds according to The European Pharmacopoeia Ed. 8.1 2014. The European Pharmacopoeia and its requirements are legally binding for the member states of the European Pharmacopoeia Convention and the European Union. All tests on our compounds certify a complete adherence to the values required. Our product passes the tests for acidity and alkalinity, absorbance, sulfated ash and extractable materials (aluminum, chromium, titanium, vanadium, zinc and heavy metals).

MARFRAN.MED® compounds are mechanically tested before and after the main steam sterilization processes (autoclave), gamma and EtO. The differences between the obtained values allow confirming that the various sterilization processes do not sensibly influence either the dimensions or the mechanical characteristics of the compound.

MARFRAN

ELASTOMERS. WITH PASSION

ISO 13485

OPTICAL
CONTROL
SYSTEM

CONTROLLED
ENVIRONMENT

MEDICAL
BRANCH
KNOWLEDGE

BIOCOMPATIBILITY

OUR
KNOW HOW

LABORATORY
RESEARCH

MARFRAN.MED

MARFRAN.MED® PROCESSABILITY

EXTRUSION
COEXTRUSION
MICROEXTRUSION
INJECTION MOULDING
OVERMOULDING
BLOW MOULDING
DIPPING

MARFRAN.MED® RANGE

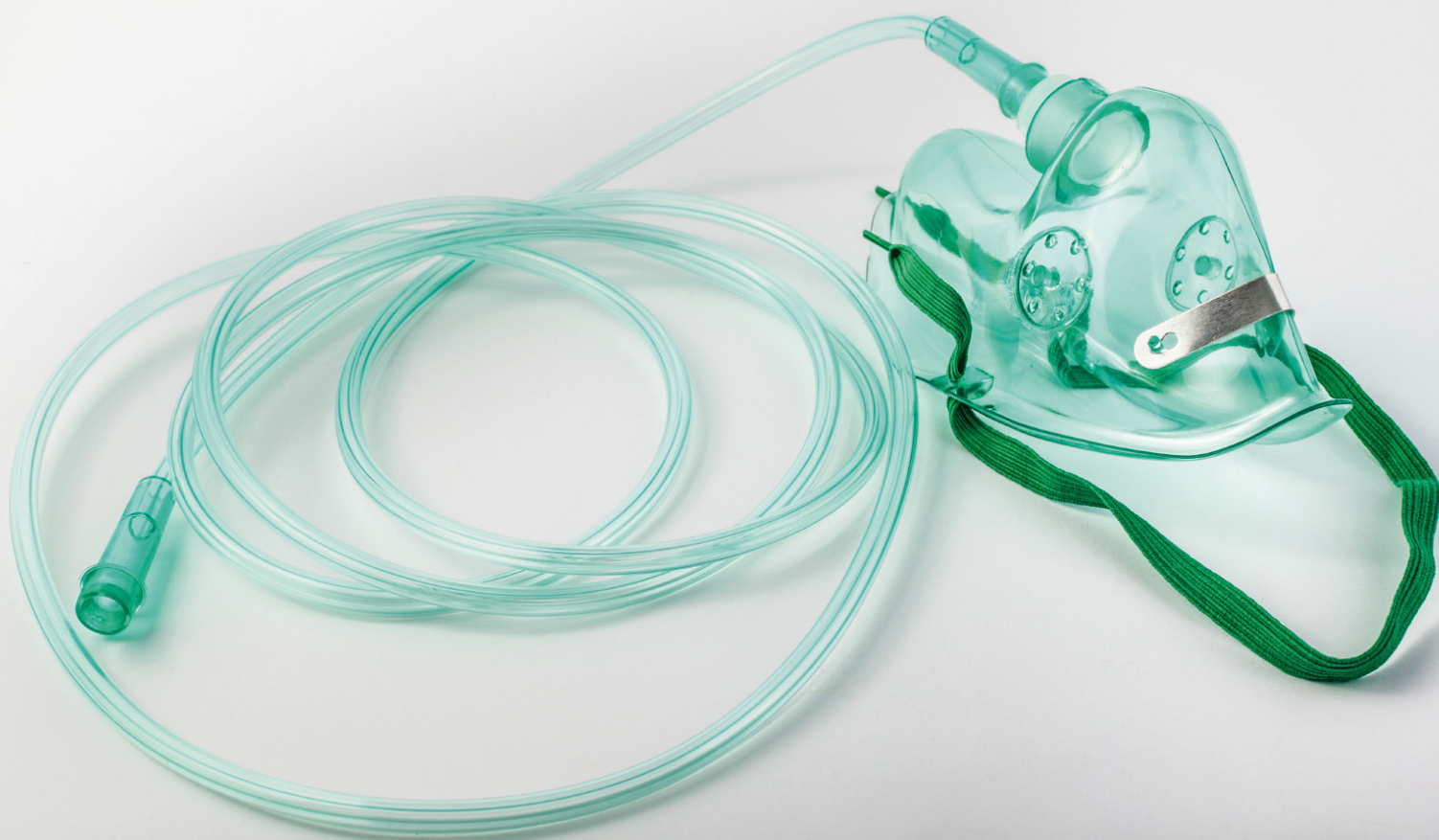
TRANSPARENT GRADES
HIGHLY TRANSPARENT GRADES
OIL FREE
RADIOOPAQUE
GAS BARRIER GRADES
CONDUCTIVE GRADES
STEAM STERILIZABLE GRADES

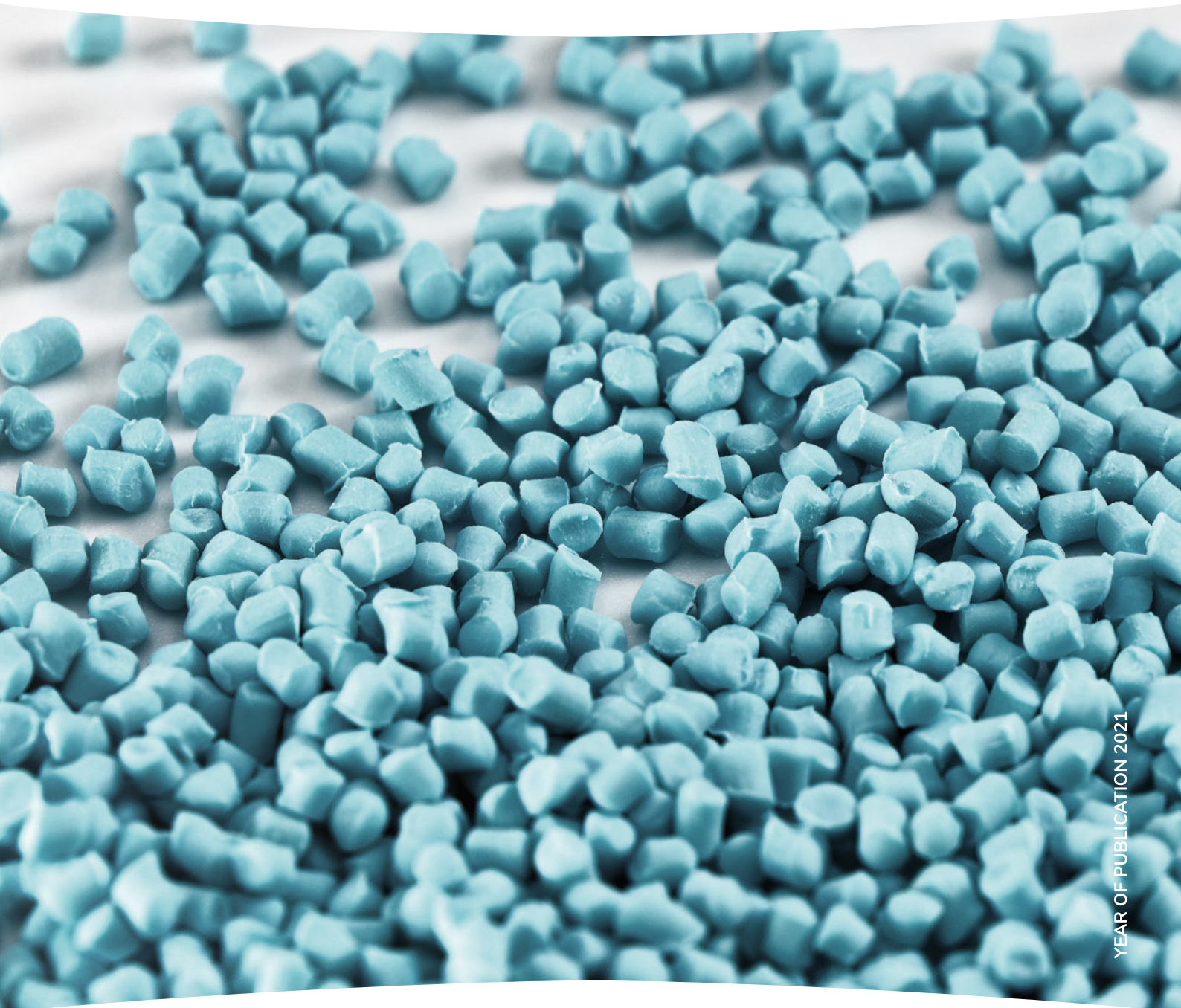
STANDARD GRADES

(USP CLASS VI + 10993-4-5-10-11 COMPLIANCE)
+ EU PHARMA ED. 8th

GRADE	Aspect	Hardness	Density (g/cm ³)	Tensile Strength (Mpa)	Flexural modulus (Mpa)	Elongation at break (%)	Tear strength (N/mm)	Extrusion & microextr.	Blowmoulding	Injection Moulding
MARFRAN.MED® ST	translucent	20-95 Sh A	0.89	3.0-13.0	-	800-700	9.0-44.0	X		X
MARFRAN.MED® LV	translucent high fluidity	20-95 Sh A	0.89	4.0-13.0	-	950-700	12.0-44.0			X
MARFRAN.MED® M	translucent high mec. prop.	30-90 Sh A	0.89	4.5-12.0	-	800	10.0-44.0	X		X
MARFRAN.MED® SM1	translucent top mec. prop.	30-90 Sh A	0.89	6.0-16.0	-	800	19.0-55.0	X		X
MARFRAN.MED® A HE	transparent high tensile	20-30 Sh A	0.89	4.0-5.0	-	750	12.0-18.0	X		X
MARFRAN.MED® TR	transparent	30-95 Sh A	0.89	3.5-12.0	-	700-650	10.0-50.0	X		X
MARFRAN.MED® TR LV	transparent high fluidity	30-95 Sh A	0.89	2.5-10.0	-	700-650	10.0-45.0			X
MARFRAN.MED® D HTRE	transparent oil free	32-58 Sh D	0.89	>15.0	40-450	750-650	70.0-125.0	X		
MARFRAN.MED® D HTR	transparent oil free	33-62 Sh D	0.89	10.0-25.0	100-500	750-700	70.0-110.0		X	X

This document is intended to provide information on our knowledge and latest laboratory tests. Technical data may vary without notice on the base of new tests or further developments. Provided information shall be intended for general technical product description.





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