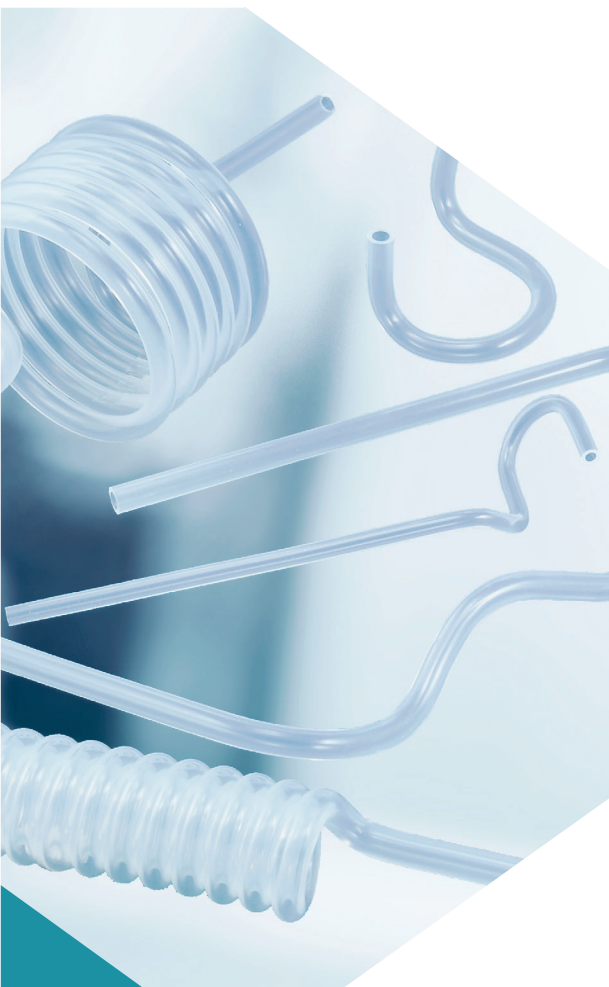


Product Line Brochure

ADVANCED LIQUID & GAS HANDLING TUBING SOLUTIONS

The Optinova Group is a leading global extruder of advanced tubing solutions for the medical device and specialty industrial market. Founded in 1971, Optinova is a Finnish company with sales offices across the world and manufacturing bases in Åland, Finland and in the Bangkok region in Thailand.

www.optinova.com



Product overview

Optinova provides advanced tubing solutions for high-pressure gas chromatography (HPLC) and liquid handling processes. Thanks to the outstanding performance of fluoropolymers in harsh environments, Optinova tubing is widely used in **analytical laboratories** and the **chemical processing industry**.

Being made from **PTFE, ePTFE, FEP, PFA, ETFE or PVdF**, Optinova tubing is **flexible and ideal to replace rigid piping systems**. The smooth bore also makes it easy to clean and prevents contamination. Our tubing offers exceptional performance in the countless filling, draining, transfer and processing applications.

“

Over 50 years of experience serving hundreds of long-term partners, **Optinova's reputation for quality and consistency** has been an industry standard that we wish to maintain every day.”

Anders Wiklund

Anders Wiklund, CEO

Optinova products stand out for **premium quality and supreme dimensional accuracy**. Optinova tubing also has the **tightest tolerances in the market**.

Key features

- **NSF51, FDA & USP VI approved**
- **Food grade approved by European EU10/2011 and Chinese GB4806 regulations**
- 2D & 3D fabricated
- Single- & multi lumen
- Multi-striped tubing available upon request
- UV, crack and chemical resistant
- Extremely low water absorption
- Temperature resistant
- Low gas permeability and autoclavable
- Beadings and monofilaments available

Applications

- Tubing for titrators, pipettes, dispensers, burettes, etc.
- Pharmaceutical production
- Dosing systems and robots
- Chlorine plants, gas-gas heat exchangers, pipe lining, discharge tubing, etc.

Contact our sales offices
or **visit our website** for
more information about
sample and specifications!

[optinova.com/contacts](https://www.optinova.com/contacts)

		PTFE	FEP	PFA
Wall	mm (inches)	>0.1-5.0 (>0.004-0.2)	>0.3-4.0 (>0.01-0.16)	>0.3-4.0 (>0.01-0.16)
Density	g/m ³	2.17	2.15	2.15
Specific gravity		2.15	2.15	2.15
Transparency		Good	Very good	Excellent
Sterilisation		EtO, Steam	EtO, Steam	EtO, Steam
Environmental				
Water absorption	%	<0.01	<0.01	<0.03
Weather resistance		Excellent	Excellent	Excellent
Chemical resistance		Excellent	Very good	Excellent
Flammability		V-0	V-0	V-0
Oxygen index	%	>95	>95	>95
Thermal				
Melting point	°C (°F)	330 (626)	257-275 (495-527)	300-310 (572-590)
Thermal conductivity	BTU/h/ft/°F	1.7	1.4	1.3
Min/Max service temp	°C (°F)	-240/260 (-400/500)	-200/200 (-328/390)	-200/260 (-328/500)
Shrink temperature	°C (°F)	335-345 (635-653)	149-232 (300-450)	
Deflection temp (66 psi)	°C (°F)	122 (252)	59 (138)	74(166)
Deflection temp (264 psi)	°C (°F)	55 (131)	57 (134)	48 (118)
Mechanical				
Tensile strength at break	MPa	20-34	20-28	25-30
Elongation at break	%	200-400	300-325	300
Compressive strength	psi	3 500	2 200	2 200
Impact strength	Ft-Lb/in	3.5	No Break	No Break
Flexural Modulus	MPa	275-620	550-700	590-700
Tensile Modulus	psi	80 000	50 000	40 000
Hardness	Shore D	55-65	55-60	55-64
Electrical				
Dielectric const at 10 ³ Hz		2.1	2.1	2.1
Dielectric const at 10 ⁶ Hz		2.1	2.1	2.1
Dielectric DF at 10 ³ Hz		0.0002	0.0001	0.0002
Dielectric DF at 10 ⁶ Hz		0.0002	0.0008	0.0003
Dielectric strength (short term) 10 mils film (D 149)	Volt/mil	>1 400	2 000	2 000
Volume resistivity (D 257)	Ohm	>10 ¹⁸	>10 ¹⁸	>10 ¹⁸

Available in standard sizes, Optinova tubing can also be **customized or colored to meet specific customer requirements**. Optinova is capable of performing **secondary operations** such as tip-forming, spiral cutting, pressure testing, etc.