Chemical hoses TYGON® and VERSILON™



TYGON® Ink 1000

Ultra-resistant chemically specialised hose for UV printing inks

Material:	polyolefin
Working temperature:	up to +55°C
Inner hardness:	98 Shore (A) ≈ 54 Shore (D)
Outer hardness:	90 Shore (A) ≈ 39 Shore (D)
Density:	0.92 g/cm^3

The new printing technologies widely introduced in recent years: digital printing, inkjet printing, wide-format printing, packaging printing and 3D printing use modern printing inks cured by ultraviolet radiation (UV inks, *UV Ink*) containing chemical components **much more aggressive** than traditional water- or solvent-based inks. UV inks contain aggressive acrylic monomers which, on polymerising, form the ink or 3D material binder; commonly used monomers are e.g. IBOA, HDDA, VCAP, VMOX, VEEA, ACMO. UV inks and materials are fed to the print head nozzles at 40°C ÷ 50°C and have varying viscosity, from high for 3D printing to low for wide-format printing. Hoses supplying UV ink must feature **excellent chemical resistance** to the ink components both internally and externally (immersion in ink). Since the ink thickens and cures under UV radiation, the hose should **fully block UV radiation** (*UV blocking*) at a wavelength of 280–400 nm. The **mechanical properties of the hose** for use in printing machines are also very important: its flexibility, defined as the minimum bend radius, and the force needed to bend it must not be too high, given the complex shape of its installation for mounting in the print head, and the need for cleaning and disassembly when replacing ink cartridges and other servicing tasks. Fatigue strength under bending is especially important in large-format printing, due to the large, fast movements of the print head. Transverse flexibility of the hose is in turn important for ease of fitting onto ends (the force needed to push on the end) while maintaining an adequate clamping of the hose on the end, for leak-tightness and connection reliability.

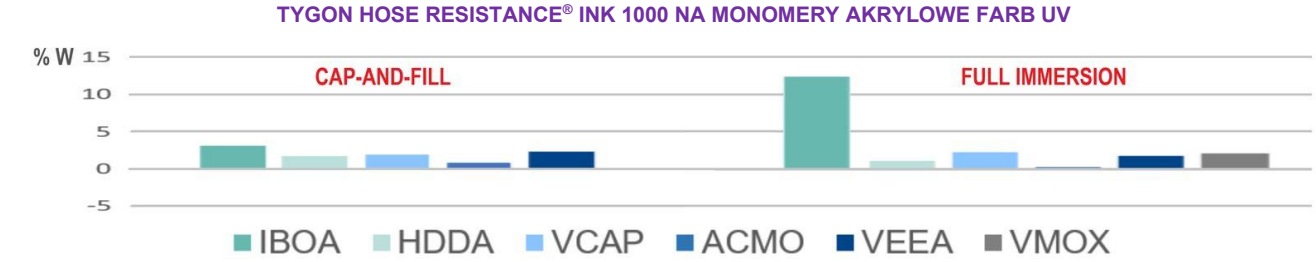
The two-layer **TYGON® Ink 1000** hose was developed to **optimise all these properties** and features exceptional chemical resistance to commonly used acrylic monomers, UV blocking, flexibility and long service life. Used for all kinds of modern printing systems, such as:

- Digital printing (*Digital printing*);
- Inkjet printing (*Inkjet printing*);
- Wide-format printing (*Wide format printing*);
- Packaging printing (*Packaging printing*);
- 3D printing (*3D printing*).



index	diameter inner [mm]	diameter outer [mm]	wall wall [mm]	working pressure 23°C / 50°C [bar]	vacuum 23°C [mm Hg]	bending radius [mm]	weight [kg/m]	length full roll* [m]
VE-A0C1S1517	3,0	5,0	1,0	9,0 / 5,7	760	9,5	0,012	15
VE-A0C1S2266	3,2	6,4	1,6	11,6 / 7,2	760	6,4	0,022	15
VE-A0C1S1518	4,0	6,0	1,0	7,4 / 4,9	760	15,9	0,014	15
VE-A0C1S2136	4,8	8,0	1,6	8,4 / 5,9	760	15,9	0,030	15
VE-A0C1S1520	6,0	8,0	1,0	5,2 / 3,9	760	19,1	0,020	15

* Note: MOQ – minimum order quantity (from the manufacturer) is 75 m ;



Resistance of the TYGON® Ink 1000 hose to individual types of acrylic monomer solvents: %W – change in hose weight after 4 weeks of contact with the solvent at 40°C, two test methods: CAP-AND-FILL – only the inner layer contacts the solvent, FULL IMMERSION – the whole hose (inside and outside) immersed in the solvent.

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