



1 Different pump tubing specifically adapt to the application.

Which tubing is right?

High-quality tubing for diverse applications

Acidly, toxic or potentially susceptible — in laboratories a lot of critical fluids are used occasionally every day. In combination with a peristaltic pump and according to the particular application, the material of tubing is crucial. See below a summary of main materials and applications.

KNUT OHLS*

Peristalsis refers to the synchronous contraction of the muscles in hollow organs that propagates as a wave and transports the contents in a given direction. This is the way in which organs such as the human esophagus or intestine work, and they act in the same way as the pump tubing. In humans, hollow organs such as these are of exceptionally high quality, which often allows them to do their job reliably for 80 years or more. This is an indication of how high the quality of the tubing material needs to be in peristaltic systems in order to guarantee acceptable durability. This required decades of development, since the con-

ditions of use were, and still are, so varied.

And who should know better what degree of elasticity and durability the tubing needs when subjected to constantly alternating contraction and relaxation phases than the people who design and manufacture the pumps. Over the course of some thirty years, Spetec Gesellschaft

für Labor- und Reinraumtechnik, based in Erding, Germany, has grown into one of the world's major manufacturers of peristaltic pumps.

High-quality tubing direct from the pump manufacturer

Not only that, constant communication with the users is an invaluable source of knowledge about the fluids being transported. It is obvious that aqueous, acidic or alkaline fluids have an entirely different effect on the interior of the tubing from organic solvents, for instance. And so it is only logical that Spetec, a manufacturer of peristaltic pumps, also manufactures the associated tubing themselves.



PLUS

DIGITAL: More information about this topic please find by using the keyword "pump tubing" on www.laborpraxis-worldwide.com.

EVENTS: Meet Spetec at Pittcon — March 5-9, 2017 in Chicago/USA (Booth: 1338).

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Nowadays, tubing is manufactured for use in analytical chemistry, for instance in flow injection analysis (FIA, continuous flow apparatus), as well as for medical, pharmaceutical and biochemical engineering and other general laboratory applications. The materials used are PVC Standard, Polyurethane, Solvent Flex (solvent-resistant), Santoprene, Silicone and Fluoro rubber (comparable to Viton). The properties and applications of these materials are outlined in table 1.

All tubing is available in a variety of configurations. The tubes come fitted with two or three bridges as standard. On request, however, more bridges can be fitted at different intervals to suit the application scenario. Tubing can also be supplied in more than 21 color combinations. The color combination of the bridges determines the internal and external diameter of the tubing. This makes it easy to identify what tube you need at any time.

The internal diameters of the tubing range between 0.12 mm and 3.2 mm. These are suited to the requirements of

Tab. 1: Properties and applications of tubing materials

Material	Application	Regulations	Comments
PVC Standard	Medical products etc. suitable for EtO sterilization	Compliant with USP Class VI, ISO 10993	Phthalate- and DEHP-free
Polyurethane	Medical products etc. suitable for sterilization	As per FDA 21CFR, USP Class VI	Phthalate- and DEHP-free
Solvent Flex	Peristaltic pumps etc. for gasoline/oils	RoHS/REACH	Phthalate- and DEHP-free
Santoprene	Non-fatty foodstuffs, etc.	Compliant with NSF Standard 51	Phthalate- and DEHP-free
Silicone	Technical products etc.	Compliant with USP Class VI, ISO 10993	Phthalate- and DEHP-free
Fluoro rubber (comparable with Viton)	Technical products etc.	RoHS/REACH	High resilience, wide temperature range

many dealers and end users. The entire range of tubing that we manufacture covers more than 450 items, most of which are available from stock. Tubing that is not available from stock can be delivered within a few days.

Spetec also offers tubing with flared ends. Special tubes manufactured to customer requirements can be also supplied

at short notice. In-house production of a range of different types and grades of tubing, which started 15 years ago, rounded off the product range. This allows pumps to be designed specifically to match the properties of the tubing to be used. The tubing undergoes constant testing under conditions that reflect real-life use. ■

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