

Saxophone Mouthpiece Materials - Part 2

by Theo Wanne

In a previous article I discussed the two most common mouthpiece materials used through history, brass and hard rubber. In this article I will discuss other interesting materials used through the history of the saxophone mouthpiece.

OTHER VINTAGE MOUTHPIECE MATERIALS

COPPER - Commercially pure copper must contain less than 0.7% total impurities, meaning it is at least 99.3% pure copper. Copper is much softer and ductile than brass or bronze. Its softness does not make it ideal for mouthpieces as it is prone to bending and gives off a duller tone. It's dullness of tone is also why it is not used to make bells or symbols, and why brass is a favorite in the manufacturing of saxophone mouthpieces. Copper is becoming more popular as a saxophone body and neck material to create a very dark and warm, though less resonant, tone.



Rare Meyer Bros. Solid Silver Tenor Saxophone Mouthpiece.

SILVER - Silver, like copper, is quite soft and ductile. It is more prone to bending out of shape than brass, and tends to have a mellow, more generic, tone. It has not been a common mouthpiece material; however, it has been put to good use by Brendan Tibbs and Ted Klum. A very rare version of a vintage Meyer Bros. solid silver tenor mouthpiece is shown here. Silver does tarnish to form a patina, which is

just oxidation. It is this patina that makes silver darken over time.

SILVERITE - Silverite, a form of pewter, which is approximately 98% tin and 2% copper, does not actually contain any silver, though its density and color resemble silver. Silverite has been used since the 1970s in Bobby Dukoff mouthpieces. This material is quite soft and must be handled carefully. This mouthpiece was made famous by David Sanborn who plays on the Dukoff Super Power Chamber model. Prior to Dukoff's use of Silverite, and starting back in the 1940s, Dukoff mouthpieces were made from brass and hard rubber. These 1940s Dukoff mouthpieces are very similar to the Otto Link mouthpieces made during that time.



Dukoff mouthpiece made of Silverite



STAINLESS STEEL - Berg Larsen mouthpieces have used stainless steel since the 1940s. In general stainless steel has a brighter, more sterile tone than brass. In the 1960s and 1970s, Berg Larsen made some brass and bronze mouthpieces too. Their brass mouthpieces had a lot more color and warmth in their tone than their stainless steel counterparts but are very rare. The bronze ones were somewhat in-between the brass and stainless in tone. Shown on the far left is the first model stainless steel mouthpiece made by Berg Larsen, affectionately called a Long-Table Berg Larsen due to its really long table. Next to it are two different vintage 'Duck Bill' models.

Vintage Berg Larsen Mouthpieces made from Stainless Steel often contained rubber dust (up to most notable mouthpieces were Gene Ammons, who mouthpiece, and Charlie Parker who Brillhart Tonalin, white Runyon Model alto plastic mouthpiece.

Runyon materials



Gene Ammons with his Brillhart Ebolin tenor saxophone mouthpiece

PLASTIC - Though often associated with student mouthpieces, Brillhart and Runyon both made professional quality mouthpieces from plastic. These mouthpieces some percentage of synthetic (30%) in the mixture as well. The musicians who played plastic played a tenor Brillhart Ebolin has been reported to play a 22, and white Selmer England

Yamaha Resin mouthpieces. These mouthpieces set the tone for a new age of mouthpiece materials. These materials we will discuss in our next article.

Runyon mouthpieces are a good bridge between vintage and new as they are a truly vintage company but were also the first to start using new materials (besides the Yamaha student mouthpiece just mentioned).

Runyon makes mouthpieces from three materials:

The Customs, Model 22's, Model 88's, and other molded mouthpieces are made of a blend, or "alloy" as Santy called it, of appx 70% acrylic and the remainder a synthetic rubber. It is engineered to have the same "flex modulus" (meaning it vibrates the same) as premium hard rubber. The addition of the synthetic rubber (which is clear also) gives the material some flex so it is much less brittle, less prone to cracking, than the acrylic alone. It will not warp like hard rubber. It resists wear very well. You don't see the side and tip rails rounded off from long use like you see with hard rubber.

A miniscule amount of tinting material is added to make this "alloy" black, transparent red, etc. For example, if you scooped up a big double handful of the mixed acrylic, synth rubber beads as it goes into the hopper on the injection molding machines, you would only see 6-10 of the tint beads mixed in.

The main reason for tinting, Mr. Runyon said, no matter how clean everything is you still get little specs of grit, he thought came in the plastic from the mfg, and it was unsightly. the tint covers that up, or makes it unnoticable.

Ad machined brass, which is triple plated chrome (copper flash, nickle, chrome, you know how that is) for the metal models.

And last... some machined Delrin models. These include the XL (machined to same dimensions as the Runyon Metal Smoothbore), and the Quantum (machined to same dimensions as the Quantum Metal).

Delrin machines beautifully because it is "self lubricating", does not melt all over the cutting tools, and can be machined very precisely, too. For mouthpieces like sopranino or bass and contrabass mouthpieces, where the cost of molding dies would never be recovered from the quantity sold, Delrin is a great option. And being "plastic", no costs for plating.

The material used for the molded Runyons is far superior to the ABS used by many other mfgs for plastic mouthpieces. Also, some mouthpieces sold as "hard rubber" aren't, but are really ABS with some hard rubber dust mixed in, according to Mr. Runyon.