

# Cataract Steel Knives / Technical Information

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## Basic Material of the Blade

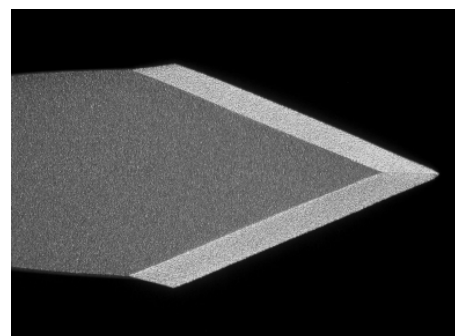
Rust-proof stainless steel is exclusively used for the blade. This material is particularly suitable for blades due to its ideal combination of hardness and strength, as well as its corrosion-resisting properties.

## Production Process of the Blade

The raw material, in the form of wire, is examined prior to actual production for various criteria (form stability, hardness, chemical composition). A log data sheet documents all the production-relevant parameters. The wire is subjected to a multiple-phase forming operation and thus, in addition to the desired shape and dimensions, acquires improved mechanical properties. Finally, by means of vacuum thermal treatment, the blade's combination of hardness and elasticity is optimized. The extreme sharpness of SIS blades is achieved via a chemical process. Complex cleaning processes and a new type of coating follow.

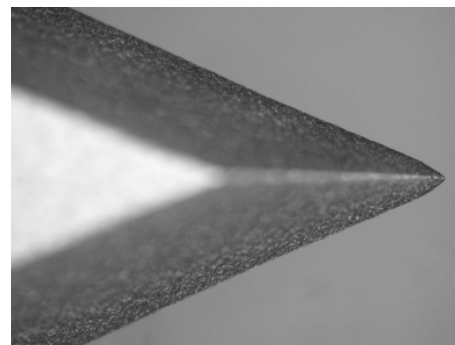
## Coating

The new biocompatible coating of the blade improves its penetration and gliding qualities to a great extent, however, without reducing sharpness. Practically effortless cutting becomes possible and consequently greatest precision with less damage to surrounding tissue.



## Blade Sharpness

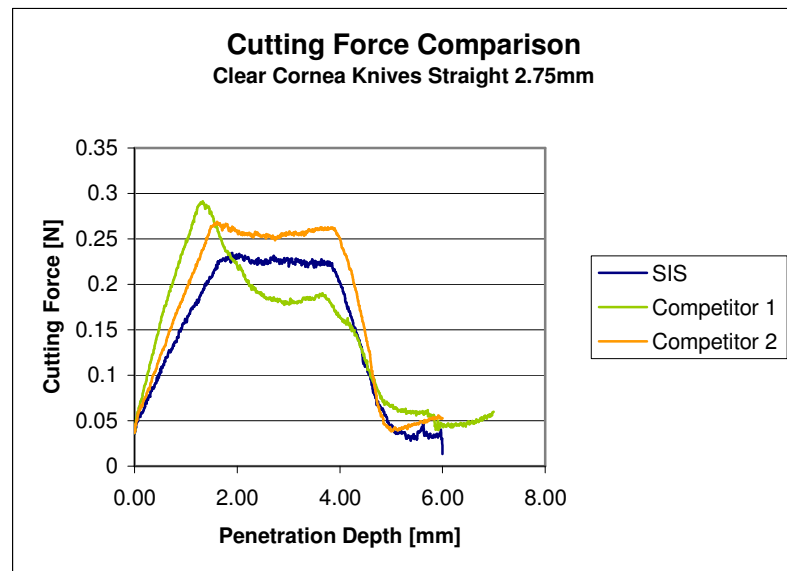
SIS blades obtain their final sharpness by means of chemical etching treatment. This procedure provides significant advantages over the frequently used method of mechanical sharpening on a grinding wheel. Reproducibility can be maintained within very exacting tolerances as it is not dependent on the inevitable abrasion of the grinding wheel. Furthermore, a non-reflecting, dull surface is produced after etching. This improves the blade's visibility during an operation. The cutting edge has a characteristic light wavy shape after chemical etching.



## Cutting Force Comparison

Due to its geometry and coating less primary, cutting force in incisions results.

The tests have been executed on pig's eyes.



## Assembly / Sterilization

The cataract steel knife is produced and assembled under clean-room conditions. Following this, gamma sterilization in accordance DIN EN 552 is carried out.

## Diversity

The SIS production and sales program comprises a wide range of cataract knives. Due to their finely graduated widths, variety of shapes and angles the choice of knife can be optimally coordinated with the type of incision.