

# Benz G72-HW

## Specifications

Water Content (%)	72
Dk (35°C, Fatt Units)	42
Refractive Index Dry	1.513
Refractive Index Hydrated (35°C)	1.384
Linear Expansion (mm)	1.560
Radial Expansion (mm)	1.560
Hardness (Shore D)	84
% Transmission (@600 nm)	>95
Standard size	Diameter - 12.70 mm, Thickness - 5.0mm
Standard Colors	Clear, Blue
UV Blocker	Available upon request
Precut	Available upon request

Note: Optional sizing and colors may be available on request.

## Manufacturing

### Environment Control:

We recommend maintaining a maximum Relative Humidity of 45% at 21±2°C

### Diamond Tooling:

Tooling	Radius (mm)
Rough	0.400
Fine	0.300

### Machining Recommendations:

Base Curve	Speed (RPM)	Feed (mm/min)	Depth (mm)
Rough	10,000	90	0.40
Fine	9,500	20	0.090
Front Curve	Speed (RPM)	Feed (mm/min)	Depth (mm)
Rough	10,000	90	0.350
Fine	9,500	17	0.060

### Benz R&D validates expansion values

Machining parameters and tool specifications are important for optimum surface finish and reaching precise target every time. Benz R&D validates the expansion values, target hitting ability and surface quality of every lot of Benz materials when machined strictly according to recommendations.

## Hydration/Sterilization

### Polishing

G72-HW should need minimal polishing or no polishing because of the expansion of this material upon hydration. If polishing is required, use XPAL, Alox 721 or comparable material. Polishing time should be a maximum of 20 seconds.

### Hydration

A two-step process best achieves lens hydration for this type of ionic material. Step 1: hydrate lenses for a minimum of 14 hours at a constant temperature of 20 ± 2°C, while stirring, in a pH 8.2 isotonic saline solution. Step 2: transfer the lenses into a pH 7.2 isotonic saline and allow lenses to remain in solution while stirring for a minimum of 3 hours.

After hydration, lenses should be rinsed, autoclaved, and stored in the pH 7.2 buffered saline solution for packaging and sterilization.

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## Hydration/Sterilization (continued)

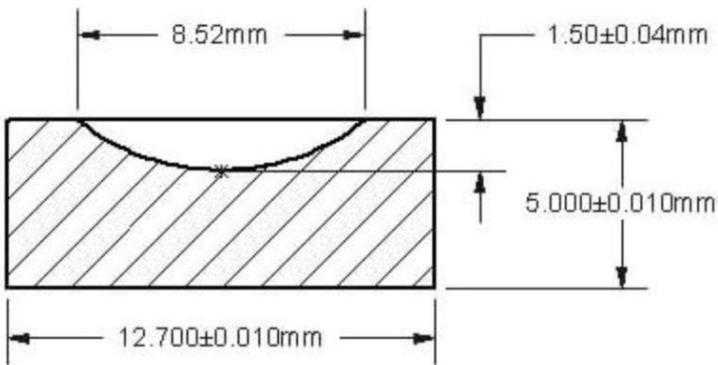
### Isotonic Saline

Borate Buffer pH 7.2; 295 mOs

NaCl 8.01 grams • H<sub>3</sub>BO<sub>3</sub> 2.47 grams • Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> · 10H<sub>2</sub>O 0.14 grams

The weights for the buffered saline formulas are based on a 1 Liter Volume solution. The borate solution shows excellent performance through the sterilization process (autoclaving) and leaves the lenses free of residue.

## Technical drawings



**Isotropic & Precision Expansion**

Benz R&D blanks have both isotropic and precision expansion characteristics. "Isotropic expansion" means equal expansion in all directions.

The diagram illustrates isotropic expansion. The top part shows a cylinder with a sphere inside, with arrows indicating expansion in all directions. The bottom part shows a sphere with axes labeled A, B, and C, indicating expansion in all directions.