

How to Dissolve INVIZ™ in Aqueous Alcohol

INVIZ™ dissolves in aqueous alcohol solutions (Ex. ethanol & water or isopropanol & water) ranging from 60% alcohol / 40% water to more than 80% alcohol / 20% water by weight at room temperature. Heat may be required to fully dissolve INVIZ™ in a 90% alcohol / 10% water solution. INVIZ™ dissolves optimally in 70% alcohol / 30% water by weight solution.

A. Safety

- 1) Safety glasses
- 2) Adequate ventilation
- 3) Refer also to your institution's internal lab safety guidelines

B. Chemicals

- 1) INVIZ™
- 2) Alcohol (Ex. ethanol or isopropanol)
- 3) Water

C. Equipment

- 1) Flask or similar container
- 2) Balance / scale
- 3) Explosion proof mixer
- 4) Heater (optional)

D. Procedure

- 1) Step one
 - a) Weigh out the appropriate amounts of alcohol and water for the desired alcohol/water solution. (60%/40%, 70%/30%, or 80%/20% by weight are common.) (Ex. 100 g 70%/30% ethanol/water solution x 70% ethanol = 70 g 200 proof ethanol + 100 g 70%/30% ethanol/water solution = 30 g water)
 - b) Add alcohol and water to a flask or similar container and begin mixing the solution using an explosion proof mixer.
- 2) Step two
 - a) Weigh out a sample of INVIZ™ equal to up to 20% of the solution weight (5% and 10% are common) (Ex. 5% (w/w) x 100 g solution = 5.0 g INVIZ™).
 - b) With agitation, slowly add INVIZ™ to the alcohol / water solution (to prevent clumping).
 - c) Mix solution for 30 minutes or until the sample is completely dissolved.
 - d) (Optional) Heat may be added to accelerate the solubility of INVIZ™ in the solution. Caution: Alcohol is highly flammable and is easily ignited by heat, sparks or flames!
- 3) Step three
 - a) The solution is ready for application. There are a number of ways to apply the solution to the object to be treated including spray coating and submersion. Plasticizers and other additives may be used to alter the properties of the solution for specific applications. A list of INVIZ™ plasticizers is available upon request. (Ex. propylene glycol)
 - b) INVIZ™ percentages above 10% of the solution weight are more likely to gel over time. All INVIZ™ solutions have significantly longer shelf lives when kept refrigerated. Re-agitate before use.