
RECIPES

MAKING WATER WITH LOW AND HIGH DISSOLVED OXYGEN

Water left uncovered in a refrigerator or in an ice chest or outside on a cold, but not freezing day, for 24 hrs will have 10-11 ppm dissolved oxygen.

Water left sitting out uncovered at room temperature at about 22-25 °C for 24 hrs should test at about 8 ppm dissolved oxygen.

Heating water will drive off all of the dissolved gases, including oxygen. If you boil water vigorously for 15 minutes and then gently pour it into a canning jar and seal it, the water will have less than 1-2 ppm dissolved oxygen. If you use a jar not intended for canning, such as a mayonnaise jar, it may shatter when the hot water hits it. If you must use a jar other than a real canning jar, put the jar in the sink. Put a table knife in the empty jar. Then pour the boiling water into the jar. It may still shatter, but the sink will catch the flood. Generally, the knife trick works. The jars must be filled completely with no air space at the top. Remove the knife and seal. Seal immediately with a canning jar lid and do not open until just before use.

For dissolved oxygen in the range of around 4 ppm, heat water on the stove to about 50 °C and hold it at that temperature for 1 hr or more. Another, easier way to get the water to hold at the correct temperature is to use a hot tray, heated serving tray, electric skillet or hot pot. For best results, allow the water to stand at the desired temperature overnight before canning it. Seal the water in canning jars with canning jar lids. If you do not have a thermometer which reads in centigrade, try a meat thermometer at 120-130 °F.

Canning jars are widely available in grocery or hardware stores in summer and early fall. Sealed heated water keeps on a shelf until use. You can make it several months ahead of time. Do not try to use plastic. Some plastics are permeable to gases. Many will wilt under boiling water to give an "interesting" new shape.

For safety and convenience, heat the water at home or in a prep room when children are not around. Allow all heated water to reach room temperature before children use it. If it has been sealed properly, no oxygen will enter until you open the jar, just before use.