



# Dri-Ref™-450

*Reference electrode*

www.wpiinc.com

**Dri-Ref-450** reference electrode exhibits stable potential, low resistance and very low electrolyte leakage. Low leakage is achieved by using KONBO<sup>®</sup>, a product of modern ceramic and conductive polymer technology, as the liquid junction. Dri-Ref has a low electrode resistance, an important consideration when making low-noise measurements.

Although the internal filling solution contains KCl, the extremely low fluid leakage means Dri-Ref may also be used in combination with ion selective electrodes, including those for K<sup>+</sup> and CL<sup>-</sup>, without significant contamination by the reference electrode.

## Instructions

The Dri-Ref™ electrode is shipped in a test tube of 3M KCl solution. Do not attempt to remove the electrode from the rubber stopper until it is free of the test tube. The compressed rubber will damage the electrode tip. First, remove the tape securing the stopper, then withdraw it and the electrode from the test tube; the electrode may now be carefully removed from the stopper.

The rubber stopper to which the storage tube was fastened may either be removed or left on the electrode shank to allow replacement of the tube when the electrode is to be stored. When storing the electrode, the rubber stopper must be pinched as it is inserted into the storage tube to allow some air in the tube to escape (otherwise, the compressed air within the storage tube will push the stopper back out). Rinse the electrode with water or electrolyte of the same strength as the sample solution before and after each use. If the electrode surface should become coated with foreign material, it can be dissolved with acid or gently sanded with fine sandpaper to expose a fresh surface.

## Storage

When not in use, store the electrode in a cool place with the tip immersed in 3M KCl.

## Troubleshooting

If you suspect a problem with the accuracy of the electrode, use another reference electrode for a comparison check.

If the electrode gives erratic readings, gently tap near the tip to clear any internal air bubbles that might be interfering with the reading.

Should you need technical assistance, please contact WPI Technical Support online at <http://www.wpiinc.com> or at WPI's headquarters in the USA at (941) 371-1003.



## **Warranty**

WPI (World Precision Instruments, Inc.) warrants to the original purchaser that this equipment, including its components and parts, shall be free from defects in material and workmanship for a period of 30 days from the date of receipt. WPI's obligation under this warranty shall be limited to repair or replacement, at WPI's option, of the equipment or defective components or parts upon receipt thereof f.o.b. WPI, Sarasota, Florida U.S.A. Return of a repaired instrument shall be f.o.b. Sarasota.

The above warranty is contingent upon normal usage and does not cover products which have been modified without WPI's approval or which have been subjected to unusual physical or electrical stress or on which the original identification marks have been removed or altered. The above warranty will not apply if adjustment, repair or parts replacement is required because of accident, neglect, misuse, failure of electric power, air conditioning, humidity control, or causes other than normal and ordinary usage.

To the extent that any of its equipment is furnished by a manufacturer other than WPI, the foregoing warranty shall be applicable only to the extent of the warranty furnished by such other manufacturer. This warranty will not apply to appearance terms, such as knobs, handles, dials or the like.

WPI makes no warranty of any kind, express or implied or statutory, including without limitation any warranties of merchantability and/or fitness for a particular purpose. WPI shall not be liable for any damages, whether direct, indirect, special or consequential arising from a failure of this product to operate in the manner desired by the user. WPI shall not be liable for any damage to data or property that may be caused directly or indirectly by use of this product.

## **Claims and Returns**

Inspect all shipments upon receipt. Missing cartons or obvious damage to cartons should be noted on the delivery receipt before signing. Concealed loss or damage should be reported at once to the carrier and an inspection requested. All claims for shortage or damage must be made within ten (10) days after receipt of shipment. Claims for lost shipments must be made within thirty (30) days of receipt of invoice or other notification of shipment. Please save damaged or pilfered cartons until claim is settled. In some instances, photographic documentation may be required. Some items are time-sensitive; WPI assumes no extended warranty or any liability for use beyond the date specified on the container.

Do not return any goods to us without obtaining prior approval and instructions from our Service Department. Goods returned (unauthorized) by collect freight may be refused. Goods accepted for restocking will be exchanged or credited to your WPI account. Goods returned which were ordered by customers in error are subject to a 25% restocking charge. Equipment which was built as a special order cannot be returned.

## **Repairs**

Contact our Service Department for assistance in the repair of apparatus. Do not return goods until instructions have been received. Returned items must be securely packed to prevent further damage in transit. The Customer is responsible for paying shipping expenses, including adequate insurance on all items returned for repairs. Identification of the item(s) by model number, name, as well as complete description of the difficulties experienced should be written on the repair purchase order and on a tag attached to the item.

**Warning: This equipment is not designed or intended for use on humans.**

## **World Precision Instruments, Inc.**

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