

**—WARNING—**

When disposing of Mercury products:



When your Mercury Filled instrument has reached the end of its useful life and you wish to dispose of it, **do NOT** place it in your household or industrial trash, or send it to a land fill.

It **MUST** be disposed of in accordance with local, state and federal regulations.

For assistance with the disposal of mercury added products, contact AERC Recycling Solutions at: [www.aerc recycling.com/contact.php](http://www.aerc recycling.com/contact.php) for the facility nearest you

How to return a non-exempt mercury instrument ordered for use in a restricted State:

Contact Palmer Instruments at (800) 421-2853 or log onto [www.palmerwahl.com](http://www.palmerwahl.com) for: additional information regarding mercury, to find a substitute product, or to obtain a Return Material Authorization (RMA) to return a non-exempt mercury instrument. You are responsible for freight and any associated restocking charges.

You may also obtain an RMA number by clicking on Service: Product Return Request on our website.

**Mercury Free Products**  
*from Palmer Wahl*

Digi-Stem T/C & RTD Thermometers

Heat Prober Hand-Held Digital Thermometers

Liquid Filled Rigid & Remote Dial Thermometers

Spirit Filled Industrial Thermometers

Bimetal Dial Thermometers



234 Old Weaverville Road • Asheville, NC 28804  
Phone: 800-421-2853 • 828-658-3131 • Fax: 828-658-0728  
[info@palmerwahl.com](mailto:info@palmerwahl.com) • [www.palmerwahl.com](http://www.palmerwahl.com)

**—WARNING—**

This product contains Mercury  
a hazardous material!

*Important Information Inside!*



**PALMER**  
INSTRUMENTS, INC.

## —RESTRICTED FOR SALE—

Please be advised that Mercury added products are restricted for sale in some States, unless the product has been specifically exempted by that State. Information regarding these states can be obtained from a number of sources.

A good internet resource on mercury topics can be found at:

[www.newmoa.org/prevention/mercury/imerc](http://www.newmoa.org/prevention/mercury/imerc), with information on restrictions applied by specific state legislation, as well as other pertinent information on mercury.

If a Palmer Instruments mercury product that is not exempt has been shipped to you in error, please contact your Distributor, or call Palmer Instruments at (800) 421-2853 to obtain a Return Material Authorization (RMA) to return that instrument immediately. You are responsible for freight and any associated restocking charges.

You may also obtain an RMA number by clicking on *Service: Product Return Request*, on our website.

## —DISTRIBUTORS—

**Do not ship into a state that has restrictions on mercury, and is not exempt**

It is our policy to ship only exempt mercury products into a restricted State.

For information on state restrictions on mercury products, and to see a complete list of states please refer to:

[www.newmoa.org/prevention/mercury/imerc/links.cfm](http://www.newmoa.org/prevention/mercury/imerc/links.cfm)

## Instructions for reuniting separated Mercury columns.

### Per National Bureau of Standards-NBS Monograph 90

*Mercury separations commonly occur as a result of exposure to shock and rough handling during shipment. This condition can generally be corrected by carefully following the procedure below, which was developed by the National Bureau of Standards (now NIST). Please read the instruction completely before attempting the repair. Contact Palmer Instruments (800) 421-2853 if you have questions, or if we can assist you in any way.*

1

Many inquiries are received concerning separated mercury columns, particularly after shipment. Since no means of avoiding such occurrences has yet been found, the recourse of stating some directions for joining the mercury is adopted. The process of joining broken columns consists of one or a series of manipulations which may be effective, and these are briefly described here.

The bulb of the thermometer may be cooled in a solution of common salt, ice and water to bring the mercury down into the bulb. Moderate tapping of the bulb on a paper pad or equally firm object or the application of centrifugal force usually serves to unite the mercury in the bulb. If the salt solution does not provide sufficient cooling, carbon dioxide snow (dry ice) may be used. Since the temperature of dry ice is about  $-78^{\circ}\text{C}$  and mercury freezes at about  $-40^{\circ}\text{C}$ , it will cause the mercury to solidify. Care must be taken to warm the top of the bulb first so that pressures in the bulb due to the expanding mercury may be relieved. Care should also be taken in handling dry ice as it may cause severe "burns".

2

If there is a contraction chamber above the bulb or an expansion chamber at the top of the thermometer tube, the mercury can sometimes be united by warming the bulb until the column reaches the separated portions in either enlargement. Great care is necessary to avoid filling the expansion chamber completely with mercury, which might produce pressures large enough to burst the bulb. Joining the mercury is more readily accomplished if the quantity in either cavity has been shattered into droplets by tapping the thermometer laterally against the hand.

3

As a last resort, especially for thermometers having no expansion chambers, small separated portions of the column can sometimes be dispersed by warming, into droplets tiny enough to leave space for the gas to by-pass, and these droplets can then be collected by a rising mercury column.

The procedure for thermometers in which organic liquids are used is similar. Liquids in the stem can more readily be vaporized and may then be drained down the bore. The latter process is aided by cooling the bulb. All of these manipulations require patience, and experience is helpful, but they will yield results if care is used. A convenient method of ascertaining that all of the liquid has been joined is a check of the ice point, or some other point on the scale.

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