Ethanolamines/Glycol Ethers
Tier 3 Procedure

Section Number: 1503
Issue Number: 1.3
Original Date: 05-19-92 **Author:** Mike Viator
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Title: Measurement Equipment Calibration Control
References: Glossary Of Equipment Identification (Text # 114)
QSP07 Inspection and Testing
QSP08 Inspection Equipment Calibration

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1503 Measurement Equipment Calibration Control

1.0 Objective:

1.1 To present minimum requirements for the control of measurement equipment calibration in the Ethanolamines/Glycol Ethers laboratory.

2.0 Scope:

2.1 This document describes a system for control of measurement equipment calibration in the Ethanolamines/Glycol Ethers laboratory.

3.0 Policy:

3.1 All analytical equipment used to take measurement will be checked daily for general workability. In addition, each calibration will be checked according to a schedule that is statistically derived. If an instrument is found to be out-of-control (out of calibration) it will immediately be corrected with appropriate action or, if unable to correct, the equipment will be taken out of service. Only after the equipment exhibits statistical control is it put back into service. Proactive measures to prevent reoccurrence of assignable causes will be explored and documented.

3.2 If measurement equipment is found to be out of control, all samples of prior shipments analyzed on that equipment will be reanalyzed to determine if that equipment was responsible for release of non-conforming product. Customers receiving non-conforming product due to equipment being out of calibration will be contacted by the product representative and/or the QAC.

3.3 Quality critical instruments (as defined by QSP08.6.2.1) sent out for calibration or repair will be approved for acceptance by signature/initials and date on accompanying documentation upon return to the plant. This also applies to service by outside vendors that perform calibration or repair work in our laboratory.

4.0 Content:

4.1 All equipment will be used in a manner which ensures that measurement uncertainty is known and is consistent with the required measurement capability.

5.0 The Laboratory Will:

5.1 Conduct an evaluation study and document findings on all measurement equipment as outlined in Dr. Donald wheelers book "Evaluating the Measurement Process" to determine variation associated with the use of these instruments.

5.2 Establish and document natural process limits.

5.3 Use these natural process limits to establish control charts which facilitate calibration control.

5.4 Use calibration standards that are NIST traceable or that are traceable to Dow's research laboratories with confirming documentation present.

5.5 Establish and document calibration check frequency based on control charts.

5.6 Use statistical techniques to determine whether recalibration is the correct action to take in an out of control situation or if an assignable cause should be found.

5.7 Use appropriate problem solving techniques to promote continuous improvement in analytical techniques and measurement capabilities.

6.0 Revisions:

Revision #1	11-18-92	Section 1503.3.2 was changed to reflect all samples of prior shipments and added statement about customers receiving non-conforming product due to equipment out of calibrations.
Revision #2	08-22-94	Added section 1503.3.3 Added changed 1503.5.4 to reflect NIST traceability.
Revision #3	06-06-95	Added References.