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21 November 2001

**Committee E01 on Analytical Chemistry for Metals, Ores and Related
Materials
Subcommittee E01.02 on Ores, Concentrates, and Related
Metallurgical Materials**

Research Report RR #E01-1033

**Inter-Laboratory Study to Establish Precision Statements for ASTM
E248, Test Method for Determination of Manganese in Manganese Ores
by Pyrophosphate Complexed Permanganate Potentiometric Titrimetry**

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2. Introduction

Due to a lack of precision and bias data, E248 - 68 was being balloted for withdrawal without replacement in 1992. Sufficient interest was expressed among those in the ore industry to merit an interlaboratory test study to generate the precision and bias data necessary to maintain the method in the Annual Book of ASTM Standards Vol. 03.05. Therefore, a task group was formed in subcommittee E01.02, Ores, Concentrates, and Related Materials, in order to conduct the necessary round-robin testing.

A preliminary letter was sent out (sample letter is Attachment 1) and eight laboratories were lined up to participate in the round robin. (After agreeing to participate, two of the eight laboratories withdrew from the study.)

Once the participating laboratories were lined up, appropriate test materials were obtained. The scope of the method is 20% to 60% Mn. Robert Brammer of Brammer Standards donated a bottle of the Chinese CRM, CMSI No. 1721, Manganese Ore, which is certified at 27.74% Mn. James I. Shultz, the ASTM/NIST Research Associate, donated a bottle of NIST SRM 25c, Manganese Ore, which is certified at 57.8% Mn. Test portions of 10 grams of each of these standards were bottled and labeled respectively "Test Sample #1 (nominal 27% - 29% Mn)", and "Test Sample #2 (nominal 57% - 59% Mn)". A box containing a bottle of both of the test samples was sent to each participating laboratory. A copy of the certificate for each of these test samples comprises Attachment 2 of this Report.

Under separate cover each laboratory received a cover letter together with a copy of the E 248 test method and two data sheets. A sample of this packet which was sent to each of the participating laboratories comprises Attachment 3 of this Report.

3. Test Method

A copy of the test method comprises Attachment 4

4. List of Participating Laboratories

Commercial Testing & Engineering Co.
16130 Van Drunen Road
South Holland, IL 60473
contact person: Everson McGuire (708) 331-2900

Elkem Metals Co
P.O. Box 299
Marietta, OH 45750
contact person: Hal Klingbergs (614) 374-1161

A. S. McCreath & Sons, Inc.
P.O. Box 1453
Harrisburg, PA 17105
contact person: Russell Eakin (717) 238-9331

NIST
Building 222, Room B210
Gaithersburg, MD 20899
contact person: Charles M. Beck II (301) 975-3847

SGS Laboratory Services
Planetenlaan 2
3318 JJ Dordrecht
The Netherlands
contact person: J. M. Oosterwijk phone: 078-52-42-77

Zinc Corporation of America
Analytical Services
300 Frankfort Road
Monaca, PA 15061
contact person: Terry Beckwith (412) 774-1020