Data Sheet for Setting-up Sample

BS SU DNR-2

Setting-up Sample for A439 Ductile Ni Resist Type D-2 - UNS Number F43000

<table>
<thead>
<tr>
<th>Element</th>
<th>Estimated Analysis</th>
<th>Analysis listed as percent by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al</td>
<td>&lt;0.1</td>
<td>Nb  &lt;0.05</td>
</tr>
<tr>
<td>C</td>
<td>2.72</td>
<td>Ni  18.9</td>
</tr>
<tr>
<td>Co</td>
<td>&lt;0.1</td>
<td>P   0.031</td>
</tr>
<tr>
<td>Cr</td>
<td>1.62</td>
<td>S   0.006</td>
</tr>
<tr>
<td>Cu</td>
<td>0.02</td>
<td>Sb  &lt;0.1</td>
</tr>
<tr>
<td>Fe</td>
<td>[73.3]</td>
<td>Si  2.52</td>
</tr>
<tr>
<td>Mg</td>
<td>0.05</td>
<td>Sn  &lt;0.1</td>
</tr>
<tr>
<td>Mn</td>
<td>0.85</td>
<td>Ti  &lt;0.05</td>
</tr>
<tr>
<td>Mo</td>
<td>0.007</td>
<td>V   &lt;0.1</td>
</tr>
</tbody>
</table>

1 The above chemistry is supplied as an approximate guide to the composition of this setup sample and must not be regarded as a certified analysis. The analysis is based on the results of the homogeneity testing performed on the sample lot. This sample was found to be suitable for use as a setting-up sample and may be used for instrument drift control. It must not be used for instrument calibration.

The requirements of ISO Guides 31, 34, and 35 were followed for the preparation of this setting-up sample and data sheet.
**Homogeneity:** This setting-up sample (SUS) was tested for homogeneity using ASTM Standard Method E 826 and found acceptable. It was also examined by spark atomic emission spectrometry and found to be compatible with the following Reference Materials — 501-676; BAS NIRM 4; CTIF NR1L, NR3L, NR4L, NR6S, NR8S, NR12S; ECRM 480/1; SRM 82B, 342A;

**Validity statement:** ISO Guide 31 states that the data sheet should contain an expiration date for all samples where instability has been demonstrated or is considered possible, after which the stated values are no longer guaranteed by the producing body. The stated values for BS SU DNR-2 are valid indefinitely. However, they are nullified if this SUS is damaged, contaminated, or otherwise modified.

**Source:** The cast stock for this SUS was produced by Acipco Steel Products; Birmingham, Al.

**Form:** This SUS is machined in the form of a disc, approximately 33 mm in diameter and 21 mm thick by Brammer Standard Company, Inc.

**Use:** This SUS is intended for use in spark atomic emission and x-ray spectrometric methods of analysis. Refer to ISO Guide 33 for information about the use of setting-up samples. It is intended as a setup standard to be used for controlling instrument drift.

**Analytical Area:** The certified area of each disc is the portion extending upward 10 mm from the larger diameter surface.

Note: Shrinkage cavities may appear in the top portion of some discs. These cavities are normal and will not affect the certified portion of the disc.

**Sample Preparation:** For best analytical results, use the same method for preparing the analytical surface on all setting-up samples as you use for production specimens. Avoid overheating the sample during surface preparation.

**Data Sheet Number:** The unique identification number for this data sheet is SU DNR-2-080114. You may obtain information on revisions of data sheets from the internet at www.brammerstandard.com.

**Safety Notice:** A Material Safety Data Sheet (MSDS) is not required for this sample. This sample will not release or otherwise result in exposure to a hazardous chemical, under normal conditions of use. Inquiries concerning this setting-up sample should be directed to:

Brammer Standard Co., Inc.  Phone: (281) 440-9396  Web: www.brammerstandard.com
14603 Benfer Road  Fax: (281) 440-4432  Email: contact@brammerstandard.com
Houston, Texas  77069-2895 USA

Brammer Standard Company, Inc., is accredited by the American Association For Laboratory Accreditation (A2LA) to ISO Guide 34 as a Reference Material Producer for the production of Certified Reference Materials and Reference Materials (Certificate Number 656.02)

Brammer Standard Company's Chemical Laboratory is accredited by A2LA to ISO Standard 17025. (Certificate Number 656.01)
References:

Versions used were those available at the time of testing and characterization

E 826 Standard Practice for Testing Homogeneity of a Metal Lot or Batch in Solid Form by Spark Atomic Emission Spectrometry


E 1806 Standard Practice for Sampling Steel and Iron for Determination of Chemical Composition

ISO Standard 17025:2005 General requirements for the competence of testing and calibration laboratories


ISO Guide 34:2009 General requirements for the competence of reference material producers


ISO Guides and Standards available from Global Engineering - www.global.ihs.com

Other useful documents available from NIST, U.S. Department of Commerce, Gaithersburg, MD 20899.

NIST Special Publication 260-100, Handbook for SRM Users

NIST Special Publication 829, Use of NIST Standard Reference Materials for Decisions on Performance of Analytical Chemical Methods and Laboratories

Certified by: ________________________________________________ on August 01, 2014.

Beau R. Brammer