

# BRAMMER STANDARD COMPANY, INC.

## Data Sheet for Setting-up Sample BS SU 4340

Setting-up Sample for Low Alloy Steel Grade 4340 - UNS Number G43400

	Estimated Analysis <sup>1</sup>		Estimated Analysis <sup>1</sup>
		Analysis listed as percent by weight	
Al	0.032	Nb	0.004
As	0.005	Ni	1.8
B	0.0002	O	0.0007
C	0.411	P	0.008
Ca	0.0002	Pb	0.0001
Co	0.013	S	0.0008
Cr	0.87	Si	0.25
Cu	0.13	Sn	0.008
Fe	95.5	Ti	0.002
Mg	<0.0005	V	0.003
Mn	0.75	W	0.003
Mo	0.26	Zr	0.002
N	0.01		

<sup>1</sup> 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; AR 4340; BAS 111; BS HON-T, 60C, 60D, 210, 4330V; ECRM 096-1; NCS NS11028; SRM 19H, 346A, 1168, 1261A, 1765, 1766, 1767.

**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 4340 are valid indefinitely. However, they are nullified if this SUS is damaged, contaminated, or otherwise modified.

**Source:** The bar stock for this SUS was produced by Tata Steel Limited; Sheffield, United Kingdom.

**Form:** This SUS is machined in the form of a disc, approximately 38 mm in diameter and 40 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 entire depth of the SUS may be used.

Caution: As with any bar sample, avoid spark atomic emission spectrometric burns in the center of the SUS (5 mm radius), as some segregation may be present.

**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 4340-083115. You may obtain information on revisions of data sheets from the internet at [www.brammerstandard.com](http://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](http://www.brammerstandard.com)**  
**14603 Benfer Road**  
**Houston, Texas 77069-2895 USA**                      **Fax: (281) 440-4432**                      **Email: [contact@brammerstandard.com](mailto:contact@brammerstandard.com)**

**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:**

**Brammer Standard Company, Inc.**                      **14603 Benfer Road, Houston, TX 77069-2895**  
**Telephone: (281) 440-9396**                      **Fax: (281) 440-4432**                      **Website: [www.brammerstandard.com](http://www.brammerstandard.com)**  
Data Sheet Number SU 4340-083115                      Page 2/3

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 1019 Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Fusion Techniques
- 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 Standard 9001:2008 Quality Management Systems - Requirements
- ISO Guide 30:1992 Terms and definitions used in connection with reference materials + 2008 amendment
- ISO Guide 31:2000 Reference materials - Contents of certificates and labels
- ISO Guide 33:2000 Uses of certified reference materials
- ISO Guide 34:2009 General requirements for the competence of reference material producers
- ISO Guide 35:2006 Reference Materials - General and statistical principles for certification

*ASTM documents available from ASTM, 1916 Race Street, Philadelphia, PA, 19103.*

*ISO Guides and Standards available from Global Engineering - [www.global.ihs.com](http://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 31, 2015.

Beau R. Brammer