

DEPARTMENT OF COMMERCE

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 16a

BASIC OPEN-HEARTH STEEL, 1.0% CARBON

| ANALYST.                      | CARBON.                   |                                |                          | SILICON.      |                | PHOSPHORUS.       |                      |                             |                                       | SULPHUR.   |                         | MANGANESE.     |             |                                   | COPPER. | CHROMIUM. | VANADIUM. |
|-------------------------------|---------------------------|--------------------------------|--------------------------|---------------|----------------|-------------------|----------------------|-----------------------------|---------------------------------------|------------|-------------------------|----------------|-------------|-----------------------------------|---------|-----------|-----------|
|                               | DIRECT COMBUSTION (ONCE). | DIRECT COMBUSTION (REBURNING). | SOLUTION AND COMBUSTION. | DROWN METHOD. | OTHER METHODS. | ALKALI MOLYBDATE. | MOLYBDATE REDUCTION. | WEIGHING PHOSPHO-MOLYBDATE. | AS $MgP_2O_7$ FROM PHOSPHO-MOLYBDATE. | OXIDATION. | EVOLUTION (CdS-Iodine). | FORD-WILLIAMS. | BISMUTHATE. | PERSULPHATE (Arsenite titration). |         |           |           |
| 1 .....                       | 1. 011                    | 1. 013                         | .....                    | .....         | .150           | .037              | .....                | .....                       | .....                                 | .030       | .028 <sup>a</sup>       | .....          | .268        | .....                             | .....   | .....     | .....     |
| 2 .....                       | .973                      | 1. 004                         | .....                    | .....         | .144           | .036              | .....                | .....                       | .....                                 | .031       | .030 <sup>b</sup>       | .....          | .264        | .....                             | .009    | .008      | None.     |
| 3 .....                       | .998                      | .....                          | .999                     | .....         | .145           | .....             | .034                 | .....                       | .034                                  | .031       | .032                    | .....          | .260        | .....                             | .....   | .....     | .....     |
| .....                         | .976                      | .....                          | .972                     | .146          | .146           | .....             | .037                 | .....                       | .....                                 | .033       | .032                    | .....          | .258        | .....                             | .....   | .....     | .....     |
| 5 .....                       | .992                      | 1. 003                         | 1. 00                    | .14           | .....          | .035              | .....                | .....                       | .....                                 | .031       | .030                    | .....          | .26         | .....                             | .....   | .....     | .....     |
| 6 .....                       | .973                      | .....                          | .....                    | .....         | .....          | .034              | .....                | .033                        | .....                                 | .028       | .027                    | .262           | .....       | .....                             | .....   | .....     | .....     |
| 7 .....                       | 1. 00                     | 1. 020                         | 1. 02                    | .14           | .14            | .035              | .....                | .035                        | .....                                 | .027       | .028                    | .....          | .27         | .27                               | .....   | .....     | .....     |
| 8 .....                       | .....                     | .....                          | 1. 02                    | .....         | .15            | .....             | .....                | .038                        | .....                                 | .....      | .030                    | .....          | .26         | .....                             | .....   | .....     | .....     |
| 9 .....                       | .994                      | 1. 005                         | .....                    | .14           | .....          | .....             | .....                | .036                        | .....                                 | .029       | .030                    | .....          | .27         | .....                             | .....   | .....     | .....     |
| AVERAGE GENERAL AVERAGE ..... | .99                       | 1. 01                          | 1. 00                    | .142          | .146           | .035              | .036                 | .035                        | 0.34                                  | .030       | .030                    | .262           | .264        | .27                               | .009    | .008      | None.     |
|                               | .998                      |                                |                          | .144          |                | .035              |                      |                             |                                       | .030       |                         | .264           |             |                                   |         |           |           |

<sup>a</sup> Evolution—H<sub>2</sub>O<sub>2</sub>—BaSO<sub>4</sub>.

<sup>b</sup> Evolution—Br—BaSO<sub>4</sub>.

INDEX TO ANALYSTS

1. John R. Cain, Bureau of Standards.
2. L. F. Witmer, Bureau of Standards.
3. Porter W. Shimer, Easton, Pa.
4. Booth, Garrett & Blair, Philadelphia, Pa.
5. H. E. Slocum, Jones & Laughlin Steel Co., South Side Department Laboratory, Pittsburgh, Pa.

6. George P. Vanier, Pennsylvania Steel Co., Steelton, Pa.
7. W. D. Brown, Carnegie Steel Co., Duquesne Works.
8. J. L. Harvey, Carnegie Steel Co., Homestead Works.
9. I. A. Nicholas, Carnegie Steel Co., Clairton Works.

This standard is not recommended for colorimetric carbon determinations, because of uncertainty as to the condition of the carbon.

S. W. STRATTON,  
Director.

Washington, D. C.