

## Sample Result Name

9822(DIA-68) HNO-S-65

Type

Unknown

Method Name

Fe-30-MO

Method Version

Grade Verification Name

Grade Verification Similarity

Grade Search Similarity

0

Status

Sample Name

9822(DIA-68) HNO-S-65

Grade

Measure Date Time

Thursday, August 14, 2014

Recalculation Date Time

12:30:25 PM

Origin

Measured  
Check Status

Grade Search Name

Outlier Removal

Not Used

Type Corr Sample Name

Correction Type

None

Not Used

|         | C     | Si    | Mn    | P     | S     | Cr    | Mo    | Ni    | Al     | Co     | Cu    | Nb     | Ti      | V      | W      | Pb     | Sn    | As    | Zr     |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|--------|---------|--------|--------|--------|-------|-------|--------|
|         | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc   | Conc   | Conc  | Conc   | Conc    | Conc   | Conc   | Conc   | Conc  | Conc  | Conc   |
| 2       | 0.098 | 0.041 | 0.33  | 0.040 | 0.037 | 0.061 | 0.015 | 0.058 | 0.004  | <0.005 | 0.055 | <0.005 | <0.0010 | <0.002 | <0.040 | <0.010 | 0.019 | 0.007 | <0.003 |
| 3       | 0.100 | 0.058 | 0.35  | 0.040 | 0.036 | 0.062 | 0.014 | 0.056 | <0.003 | <0.005 | 0.053 | <0.005 | <0.0010 | 0.002  | <0.040 | <0.010 | 0.021 | 0.008 | <0.003 |
| 5       | 0.094 | 0.056 | 0.37  | 0.033 | 0.035 | 0.060 | 0.012 | 0.058 | <0.003 | <0.005 | 0.054 | <0.005 | <0.0010 | 0.002  | <0.040 | <0.010 | 0.024 | 0.011 | <0.003 |
| 6       | 0.092 | 0.054 | 0.36  | 0.038 | 0.038 | 0.060 | 0.013 | 0.064 | <0.003 | <0.005 | 0.056 | <0.005 | <0.0010 | <0.002 | <0.040 | <0.010 | 0.024 | 0.012 | <0.003 |
| Rep     | 0.096 | 0.053 | 0.35  | 0.038 | 0.037 | 0.061 | 0.013 | 0.059 | 0.003  | <0.005 | 0.054 | <0.005 | <0.0010 | 0.002  | <0.040 | <0.010 | 0.022 | 0.009 | <0.003 |
| Min Cal | 0.006 | 0.005 | 0.004 | 0.003 | 0.002 | 0.005 | 0.003 | 0.005 | 0.003  | 0.002  | 0.002 | 0.005  | 0.0010  | 0.002  | 0.040  | 0.010  | 0.002 | 0.005 | <0.003 |
| Mean    | 0.096 | 0.053 | 0.35  | 0.038 | 0.037 | 0.061 | 0.013 | 0.059 | <0.007 | 0.005  | 0.054 | <0.008 | <0.004  | 0.002  | <0.009 | <0.009 | 0.022 | 0.009 | <0.003 |
| Max Cal | 3.00  | 5.04  | 18.12 | 0.18  | 0.30  | 36.00 | 10.20 | 55.2  | 6.24   | 21.60  | 7.44  | 3.60   | 3.60    | 12.00  | 7.32   | 0.13   | 0.27  | 0.13  | 0.19   |

|         | Ca     | B      | Fe   |
|---------|--------|--------|------|
|         | Conc   | Conc   | Conc |
| 2       | 0.003  | 0.002  | 99.2 |
| 3       | 0.001  | 0.002  | 99.1 |
| 5       | 0.001  | 0.002  | 99.1 |
| 6       | 0.0010 | 0.002  | 99.1 |
| Rep     | 0.002  | 0.002  | 99.1 |
| Min Cal | 0.0005 | 0.0005 |      |
| Mean    | 0.002  | 0.002  | 99.2 |
| Max Cal | 0.016  | 0.025  |      |

Quality in 1008 ad  
per ser 26-615

8/16/2014

Sample Results



# SHARU STEELS (P) LTD.

B-48 & D-251, Phase-VII, Focal Point, LUDHIANA - 141 010.  
Mobile : 98550-82559 E-mail : info@sharusteels.com & sales@sharusteels.com

QUALITY ASSURANCE DEPARTMENT  
METALLURGICAL TEST REPORT

F-QCD-03

ISO 9001 : 2008  
Certified Company

## TEST CERTIFICATE

|                                                                                                                                            |                                                              |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|
| M/S. SARA SAE PRIVATE LIMITED DIVISION-II<br>A-2 SARA INDUSTRIAL ESTATE LTD.<br>CHAKRATA ROAD, SELAQUI RAMPUR<br><br>DEHRADUN (UTTRAKHAND) | T.C. No. 0494<br><br>Invoice No.<br><br>Truck No. PB23K/8410 | Date 09-08-2014 |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|

| GRADE   | SIZE  | HEAT NO. | MANUFACTURING ROUTE | COLOUR CODE | SUPPLY COND. | QNTY. M.T. | NO. OF PCS. |
|---------|-------|----------|---------------------|-------------|--------------|------------|-------------|
| SAE1008 | 68 MM | S-65     | L/HT                | WHITE       | AS ROLLED    | 6.910 MT   | LOOSE       |

### CHEMICAL COMPOSITION IN PERCENTAGE

|        | C    | Mn   | S     | P     | Si   | Ni | Cr | Mo | V | Al    | Cu | Sn | Ti | B | Ca |
|--------|------|------|-------|-------|------|----|----|----|---|-------|----|----|----|---|----|
| Min.   | -    |      |       |       |      |    |    |    |   |       |    |    |    |   |    |
| Max.   | -    |      |       |       |      |    |    |    |   |       |    |    |    |   |    |
| Actual | 0.08 | 0.42 | 0.021 | 0.030 | 0.10 |    |    |    |   | 0.022 |    |    |    |   |    |

### METALLURGICAL RESULTS

| INCLUSION RATING IS : 4163/JK CHART/ASTM E-45A |     |   |     |   |     |   |     |  | Aust. Grain Size ASTM No. (E-112) |     | Gas content (ppm) |  |
|------------------------------------------------|-----|---|-----|---|-----|---|-----|--|-----------------------------------|-----|-------------------|--|
| A                                              |     | B |     | C |     | D |     |  | Decarb. (MM)                      |     | O <sub>2</sub>    |  |
| T                                              | H   | T | H   | T | H   | T | H   |  |                                   |     | N <sub>2</sub>    |  |
| STD                                            |     |   |     |   |     |   |     |  | Micro-Structure                   | p+f | H <sub>2</sub>    |  |
| MAX                                            |     |   |     |   |     |   |     |  |                                   |     |                   |  |
| ACTUAL                                         | 1.0 |   | 1.0 |   | 1.0 |   | 1.0 |  |                                   |     |                   |  |

| MECHANICAL PROPERTIES |        |      |      |      |              |                      | MACRO | ULTRASONIC TEST | MIX UP TEST |
|-----------------------|--------|------|------|------|--------------|----------------------|-------|-----------------|-------------|
|                       | U.T.S. | Y.S. | EL % | RA % | Impact Value | Hardness B.H.N. / Rb | OK    |                 | OK          |
| Reqd.                 |        |      |      |      |              |                      |       |                 |             |
| Actual                |        |      |      |      |              | 144                  |       |                 |             |

### HARDENABILITY (HRC) AS PER IS : 3848

|          |  |  |  |  |  |  |  |  |  |  |
|----------|--|--|--|--|--|--|--|--|--|--|
| Distance |  |  |  |  |  |  |  |  |  |  |
| Regd.    |  |  |  |  |  |  |  |  |  |  |
| Actual   |  |  |  |  |  |  |  |  |  |  |

Remarks :

Qualify in 1008  
as per SES 26-615  
Deepak