

The Technical Association of Refractories, Japan

## Certified Reference Material Series for X-ray Fluorescence Analysis of Refractories

J R R M 2 2 1 - 2 3 2 (Series No2 for Silica Refractories)

## Certificate of Analyses

Constituent	Unit mass%												
	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	MnO	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	Cr <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>	
JRRM 221	83.8 <sub>5</sub>	10.0 <sub>32</sub>	1.5 <sub>72</sub>	0.0 <sub>44</sub>	0.1 <sub>51</sub>	2.7 <sub>86</sub>	0.6 <sub>86</sub>	0.4 <sub>61</sub>	0.2 <sub>70</sub>	0.0 <sub>14</sub>	0.0 <sub>22</sub>	0.0 <sub>12</sub>	
JRRM 222	84.8 <sub>1</sub>	7.6 <sub>61</sub>	3.8 <sub>69</sub>	0.7 <sub>88</sub>	0.0 <sub>56</sub>	0.1 <sub>69</sub>	0.9 <sub>40</sub>	0.2 <sub>05</sub>	0.7 <sub>87</sub>	0.0 <sub>06</sub>	0.0 <sub>06</sub>	0.4 <sub>88</sub>	
JRRM 223	86.0 <sub>8</sub>	5.2 <sub>27</sub>	2.0 <sub>42</sub>	0.0 <sub>49</sub>	0.2 <sub>03</sub>	4.1 <sub>47</sub>	0.2 <sub>71</sub>	0.6 <sub>93</sub>	0.3 <sub>72</sub>	0.0 <sub>14</sub>	0.0 <sub>36</sub>	0.6 <sub>76</sub>	
JRRM 224	87.9 <sub>0</sub>	4.6 <sub>61</sub>	2.4 <sub>73</sub>	0.1 <sub>53</sub>	0.1 <sub>64</sub>	1.9 <sub>59</sub>	0.2 <sub>92</sub>	0.2 <sub>88</sub>	0.9 <sub>03</sub>	0.6 <sub>88</sub>	0.3 <sub>09</sub>	0.0 <sub>03</sub>	
JRRM 225	89.9 <sub>8</sub>	3.2 <sub>28</sub>	1.2 <sub>74</sub>	0.4 <sub>25</sub>	0.0 <sub>71</sub>	3.1 <sub>91</sub>	0.1 <sub>36</sub>	0.9 <sub>01</sub>	0.6 <sub>31</sub>	0.0 <sub>12</sub>	0.0 <sub>14</sub>	0.0 <sub>11</sub>	
JRRM 226	91.2 <sub>9</sub>	2.6 <sub>34</sub>	2.9 <sub>92</sub>	0.2 <sub>96</sub>	0.0 <sub>29</sub>	0.9 <sub>73</sub>	0.0 <sub>96</sub>	0.1 <sub>93</sub>	0.4 <sub>75</sub>	0.2 <sub>38</sub>	0.2 <sub>45</sub>	0.3 <sub>20</sub>	
JRRM 227	92.9 <sub>7</sub>	1.6 <sub>60</sub>	0.8 <sub>10</sub>	0.0 <sub>92</sub>	0.2 <sub>38</sub>	2.4 <sub>18</sub>	0.0 <sub>57</sub>	0.0 <sub>58</sub>	0.1 <sub>12</sub>	0.0 <sub>03</sub>	0.4 <sub>54</sub>	0.8 <sub>83</sub>	
JRRM 228	93.8 <sub>9</sub>	0.3 <sub>98</sub>	0.0 <sub>88</sub>	1.2 <sub>11</sub>	0.0 <sub>35</sub>	1.7 <sub>85</sub>	0.1 <sub>19</sub>	1.1 <sub>88</sub>	0.1 <sub>06</sub>	0.9 <sub>91</sub>	0.0 <sub>85</sub>	0.0 <sub>11</sub>	
JRRM 229	95.7 <sub>4</sub>	1.1 <sub>74</sub>	0.1 <sub>90</sub>	0.1 <sub>21</sub>	0.0 <sub>74</sub>	1.4 <sub>12</sub>	0.4 <sub>68</sub>	0.0 <sub>73</sub>	0.0 <sub>79</sub>	0.0 <sub>17</sub>	0.3 <sub>74</sub>	0.2 <sub>01</sub>	
JRRM 230	97.7 <sub>8</sub>	0.1 <sub>80</sub>	0.7 <sub>01</sub>	0.0 <sub>33</sub>	0.1 <sub>21</sub>	0.6 <sub>08</sub>	0.0 <sub>16</sub>	0.0 <sub>76</sub>	0.0 <sub>28</sub>	0.3 <sub>88</sub>	0.0 <sub>57</sub>	0.0 <sub>01</sub>	
JRRM 231	98.6 <sub>1</sub>	0.6 <sub>30</sub>	0.0 <sub>49</sub>	0.0 <sub>03</sub>	0.0 <sub>04</sub>	0.0 <sub>05</sub>	0.0 <sub>04</sub>	0.0 <sub>06</sub>	0.0 <sub>04</sub>	0.0 <sub>01</sub>	0.1 <sub>88</sub>	0.3 <sub>83</sub>	
JRRM 232	99.7 <sub>7</sub>	0.0 <sub>52</sub>	0.0 <sub>53</sub>	0.0 <sub>02</sub>	0.0 <sub>05</sub>	0.0 <sub>04</sub>	0.0 <sub>01</sub>	0.0 <sub>05</sub>	0.0 <sub>04</sub>	0.0 <sub>01</sub>	0.0 <sub>02</sub>	0.0 <sub>01</sub> <sup>* 1</sup>	

\* 1 : Uncertified value

Note: The above values show the contents after igniting for an hour at 800±25 °C.

Prepared, values given and certified by

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