N₂ sorptiometry was carried out at liquid nitrogen temperature (−195 °C) using a model Nova series 2000 Quanta-chrome automatic sorptiometer (USA), powered with standard BET (Brunauer–Emmett–Teller) algorithm [28] for determination of the specific surface area (m²/g).

Table 1
Average crystallite (CS) and particle (PS) sizes, and BET ($S_{BET}$) and calculated geometric ($S_g$) specific surface areas for the magnetite test samples.

<table>
<thead>
<tr>
<th>Sample</th>
<th>CS $^a$ /± 2 nm</th>
<th>PS $^b$ /± 2 nm</th>
<th>$S_{BET}$ /± 3 m²g⁻¹</th>
<th>$S_g$ $^c$ /± 2 m²g⁻¹</th>
<th>$f=S_g/S_{BET}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>35</td>
<td>200–350</td>
<td>13</td>
<td>33</td>
<td>2.5</td>
</tr>
<tr>
<td>S2</td>
<td>11</td>
<td>25–30</td>
<td>126</td>
<td>105</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Comment: ??
Recently Palmer and Clark\textsuperscript{19} published adsorption isotherms of acetone, benzene, and other organic vapors on samples of vitreous silica whose total surface area had been measured by comparing the initial rate of solution in hydrofluoric acid of the powdered sample with the rate of solution of a sample whose area was known. If one plots the adsorption isotherms of acetone on vitreous silica according to equation (A) one obtains a very good straight line whose slope cor-
Analysis of a cited paper:

responds to a $v_m$ value of 50.6 micromoles of acetone on a 14.67 g. sample of vitreous silica. The specific surface of this same sample was 4690 sq. cm. according to Palmer and Clark's measurements of the rate of solution in hydrofluoric acid. If one uses for the area occupied by one acetone molecule on the surface the value 26.9Å.$^2$ (which is obtained from the density of liquid acetone at 25°), one obtains from the above $v_m$ value a specific surface of 5640 sq. cm., which is about 20% larger than Palmer and Clark's value. If on the other hand one uses for the area occupied by an acetone molecule the value 20.5Å.$^2$, obtained by N. K. Adam for close-packed films on water of long-chain compounds terminating in the CO–CH$_3$ group, one obtains for the specific surface 4290 sq. cm., which is about 8% smaller than the value of Palmer and Clark. These data suffice to show that the agreement is very good, and in our opinion is a weighty confirmation of the method that they used for measuring the surface of vitreous silica.

Check!

\[\frac{50.6 \times 10^{-6}}{14.67} \times 6.022 \times 10^{23} \times 26.9 \times 10^{-16} = 5587 \text{ cm}^2/\text{g} \ (\text{OK?})\]

\[\frac{50.6 \times 10^{-6}}{14.67} \times 6.022 \times 10^{23} \times 20.5 \times 10^{-16} = 4258 \text{ cm}^2/\text{g} \ (\text{OK?})\]