KREMER PIGMENTE GmbH & Co. KG
Hauptstrasse 41-47, 88317 Aichstetten, Germany
Phone: 0049 7565 914480 – www.kremer-pigmente.de

Madder Lake Production

(MedColourTech Project – 2006-2009)
August 2007:

Test-Production of Madder Lake pigment, according to a historic recipe, mentioned in “Die Farbstoffe” by P. Schützenberger, 1873.
The shredded and washed madder roots are boiled in an alum solution...
filtered...
sodium carbonate is added to the cold madder solution and brought to boiling point
The hot liquid...
is left to cool down...
and pumped through a high pressure filter system.
The extracted pigment stays in the filters, the filtered liquid is almost clear.
The filters are separated...
and left to dry.
Unground dried madder lake.
16 Madder Lakes were tested for lightfastness in July 2008.

The Madder Lakes were ground in linseed oil and applied onto wood. Half of the colors were covered with black paper, half of each color was exposed to sunlight.

On 29 September 2008 the following visual results could be recorded:

<table>
<thead>
<tr>
<th>Product No</th>
<th>Product Name</th>
<th>Results</th>
<th>Product No</th>
<th>Product Name</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>37202</td>
<td>Madder Lake</td>
<td>Satisfactory</td>
<td>372057</td>
<td>Madder Lake &quot;CRIMSON&quot;</td>
<td>Poor</td>
</tr>
<tr>
<td>37203</td>
<td>Madder Lake, yellowish</td>
<td>Good</td>
<td>372058</td>
<td>Madder Lake &quot;HAZELNUT&quot;</td>
<td>Excellent</td>
</tr>
<tr>
<td>372051</td>
<td>Madder Lake &quot;CORAL&quot;</td>
<td>Satisfactory</td>
<td>37210</td>
<td>Madder Lake, dark</td>
<td>Fair</td>
</tr>
<tr>
<td>372052</td>
<td>Madder Lake &quot;SALMON&quot;</td>
<td>Fair</td>
<td>37217</td>
<td>Madder Lake, violet-brown</td>
<td>Good</td>
</tr>
<tr>
<td>372053</td>
<td>Madder Lake &quot;Peach&quot;</td>
<td>Good</td>
<td>372141</td>
<td>Madder Lake, luminous dark red</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>372054</td>
<td>Madder Lake &quot;Rose&quot;</td>
<td>Satisfactory</td>
<td>372142</td>
<td>Madder Lake, brilliant bordeaux red</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>372055</td>
<td>Madder Lake &quot;ROSE WOOD&quot;</td>
<td>Fair</td>
<td>23610</td>
<td>Alizarine Crimson dark</td>
<td>Very good</td>
</tr>
<tr>
<td>372056</td>
<td>Madder Lake &quot;ORANGE&quot;</td>
<td>Fair</td>
<td>23611</td>
<td>Alizarine Crimson dark, Type C</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Very good = no bleaching can be seen  
Good = slight bleaching, the color character is unchanged  
Satisfactory = the hue has changed its intensity, it is still clearly identifiable  
Fair = the hue has changed visibly, it is much weaker but still identifiable  
Poor = hue and intensity have changed immensely, the original color can hardly be recognized
pigment ground in medium like gum arabic, painted on paper for lightfastness tests
Lightfastness test
The following products were produced for the MedColourTech project:

372048  Madder Lake, Kremer Made, 09/2008 - MedColourTech - "COGNAC", precipitated with tin
372049  Madder Lake, Kremer Made, 08/2008 - MedColourTech - "ORANGE", precipitated with tin
372050  Madder Lake, Kremer Made, 08/2008 - MedColourTech - "SAFFRON"
372051  Madder Lake, Kremer Made, 08/2007 - MedColourTech - "CORAL"
372052  Madder Lake, Kremer Made, 09/2007 - MedColourTech - "SALMON"
372053  Madder Lake, Kremer Made, 12/2007 - MedColourTech - "PEACH"
372054  Madder Lake, Kremer Made, 12/2007 - MedColourTech - "ROSÉ"
372055  Madder Lake, Kremer Made, 06/2008 - MedColourTech - "ROSEWOOD"
372056  Madder Lake, Kremer Made, 06/2008 - MedColourTech - "ORANGE"
372057  Madder Lake, Kremer Made, 06/2008 - MedColourTech - "CRIMSON", precipitated with copper
372058  Madder Lake, Kremer-Made, 07/2008 - MedColourTech - "HAZELNUT", precipitated with copper
372059  Madder Lake, Kremer-Made, 07/2008 - MedColourTech - "BROWN", precipitated with tin
Madder Lakes