Coomassie® Brilliant Blue R-250 (C.I. 42660)  

**Synonym**
Bruilliant Blue R, Xylenebriliantcyaine

**state of matter**
Solid

**Formula**
C_{45}H_{44}N_{3}NaO_{7}S_{2}

**M**
825.98 g/mol

**CAS-No.:**
6104-59-2

**HS-No.:**
32041200

**EC-No.:**
228-060-5

**Storage:**
RT

**LGK:**
10 - 13

**WGK:**
1

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<table>
<thead>
<tr>
<th>Specification</th>
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<tr>
<td><strong>λ_{max.} (buffer pH 7.0)</strong></td>
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<tr>
<td>554 - 563 nm</td>
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<tr>
<td><strong>E 1 %,1 cm, λ_{max.}</strong></td>
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<td>&gt;300 (pH 7.0)</td>
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**Literature**

Two new staining procedures for quantitative estimation of proteins on electrophoresis strips.

A procedure for rapid and sensitive staining of protein fractionated by polyacrylamide gel electrophoresis.

Improved staining of proteins in polyacrylamide gels including isoelectric focusing gels with clear background at nanogram sensitivity using Coomassie® Brilliant Blue G-250 and R-250.

Modified Coomassie® Blue staining of proteins in polyacrylamide gels with Bismark brown.

Why does Coomassie® Brilliant Blue R Interact Differently with Different Proteins?
Coomassie® Brilliant Blue R-250 (C.I. 42660) A1092

Comment

Coomassie® Brilliant Blue R-250 is one of the most commonly used stains for proteins, after their separation by polyacrylamide gel electrophoresis. The protein-dye complex has an absorption maximum at 549 nm, the dye without protein at 555 nm (in 0.01 M citrate buffer, pH 3). The intensity in staining of proteins probably depends on the basicity of a protein (5). Per positively charged amino acid approximately 1.5 - 3 molecules of Coomassie® will be bound. This variation complicate the exact protein determination with albumin as a standard, since this protein contains more basic amino acids than many other proteins (5). There do exist many protocols for sensitive staining procedures with Coomassie® (e. g. ref. 3, 4). The sensitivity reaches a limit at 25 ng protein (4). We recommend the following protocol:

I. Staining solution: 0.1 % Coomassie® Brilliant Blue R-250 (Prod.-No. A1092) 20 % methanol (or ethanol) 10 % acetic acid

The SDS gel (without 'stacking gel') is stained for 1 hour at 60°C or for 2 hours at 50°C or over night at RT.

II. Destaining solution: 20 % methanol (or ethanol) 10 % acetic acid

Destain the gel for 3 - 4 hours at 50 - 60°C. Add some sponges. Subsequently wash the gel for 15 minutes in water and dry under vacuum at 60°C for 2 - 3 hours.