BRILLIANT BLUE R
Product Number B0149
Replacement for Product Code 37,920-4

CAS NUMBER: 6104-59-2
Synonyms: Coomassie Brilliant Blue R-250, Brilliant Indocyanine 6B, C.I. number 42660

PHYSICAL PROPERTIES:
Appearance: Dark red-brown powder
Molecular Weight: 826
Molecular Formula: C_{45}H_{44}N_{3}O_{7}S_{2}Na
Extinction Coefficient: E^{1%}(587 \text{ nm}) = 785 \text{ (methanol).} \footnote{1}
(Sigma's analytical results from 14 of our past lots yielded an average of E^{1%}=509 at 589 nm in ethanol)
Purity: Dye content approximately 50%
Purity: B7290 (Dye content approximately 90%)

STABILITY / STORAGE AS SUPPLIED:
Recommended storage is at room temperature. The minimum shelf-life should be three to five years.

SOLUBILITY / SOLUTION STABILITY:
Maximum solubilities\footnote{2}: 70 mg/ml in water, 20 mg/ml in methyl cellosolve, and 10 mg/ml in ethanol. Sigma tests the solubility at 10 mg/ml in water which yields a dark blue-black solution.

Staining solutions at 0.25 % in 40 % methanol plus 7 % acetic acid in deionized water remain suitable for staining PAGE gels stored at room temperature for at least two months.

USAGE / APPLICATIONS:
Brilliant Blue R has been used for many years for staining proteins on polyacrylamide electrophoresis gels.\footnote{1,3} Improvement of sensitivity and background have been accomplished using Brilliant Blue dyes in a colloidal form.\footnote{4} The Brilliant Blue R-Protein complex has an absorption maximum between 560 and 575 nm.\footnote{5} (Scanning is usually done at 570 nm.) The staining intensity of proteins may be related to the basicity of the protein involved.\footnote{5}
**USAGE / APPLICATIONS:** (continued)

Other applications for brilliant Blue R include use in detection of lipids in thin layer chromatography\(^6\), determination of the CMC of detergents\(^7\), and detection of proteins in solution\(^8\), as well as on cellulose acetate plates\(^9\).

Sigma offers several preformulated concentrates for staining PAGE gels. The most common staining solution (see Product B8647) is 0.25% Brilliant Blue R in 40% methanol plus 7% acetic acid in deionized water.

**REFERENCES:**