



Product Information Sheet

T8092 Toluidine Blue O

Synonyms: Basic Blue 17; Blutene chloride; Methylene Blue T50 or T extra; Tolonium Chloride; C.I. 52040
CAS: 92-31-9
Formula: C₁₅H₁₆ClN₃S
Mol. Weight: 305.83

Properties

Form: Powder
Appearance: Dark Green
Solubility: Soluble in Water
Application: Biological Stain, Phytopathology
Storage Temp: Room Temperature
Typical Working Concentration: Varies, should be determined by end user.

Application Notes

Used as a stain for plant tissues. Table 1 lists color development of certain types of plant tissues when using Toluidine Blue O (Parker 1982).

TABLE 1. Differentiations Observed in Cell Types and Tissue Structures Using Toluidine Blue

Tissue Element or Structure	Color Developed by Toluidine Blue
Xylem	Green or Blue-Green
Phloem	Red
Sclerenchyma	Blue-green, sometimes Green
Collenchyma	Red-Purple
Parenchyma	Red-Purple
Callose, Starch	Unstained

Toluidine Blue O is commonly used as a metachromatic stain that can differentiate between different types of plant tissues and if present, fungal contaminants (Kuroda 2005; Sakai 1973).

References

- Kuroda K (2005) Xylem dysfunction in Yezo spruce (*Picea jezoensis*) after inoculation with the blue-stain fungus *Ceratocystis polonica*. *For. Path.* 35; Pp.346–358.
- Parker A.J., E.F. Haskins and I. Deyrup-Olsen (1982) Toluidine Blue: A Simple, Effective Stain for Plant Tissues. *The American Biology Teacher*, 44(8), pp. 487-489.
- Sakai WS (1973) Simple Method for Differential Staining of Paraffin Embedded Plant Material Using Toluidine Blue O. *Biotechnic & Histochemistry* 48(5), Pp. 247-249.