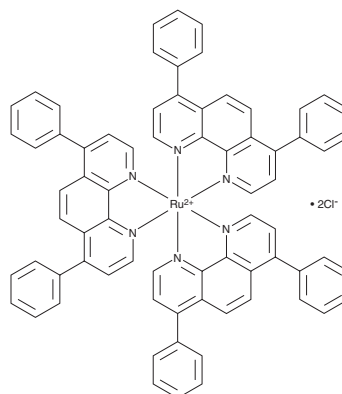


PRODUCT INFORMATION

Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex

Item No. 16117

CAS Registry No.: 36309-88-3
Formal Name: (OC-6-11)-tris(4,7-diphenyl-1,10-phenanthroline-κN¹,κN¹⁰)-ruthenium(2+), dichloride
Synonym: Ru(ddp)
MF: C₇₂H₄₈N₆Ru • 2Cl
FW: 1,169.2
Purity: ≥95%
UV/Vis.: λ_{max}: 279, 464 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex is supplied as a crystalline solid. A stock solution may be made by dissolving the tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex in the solvent of choice, which should be purged with an inert gas. Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex in these solvents is approximately 25 mg/ml.

Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Tris(4,7-diphenyl-1,10-phenanthroline)ruthenium II dichloride complex is a luminescent probe (absorption λ_{max}: 455 nm, luminescence λ_{max}: 613 nm) widely used for detection and quantitation of oxygen.¹ The dye is strongly reduced by molecular oxygen as a result of dynamic quenching; thus oxygen detection can be based on either measurement of intensity or decay time.² This oxygen probe has been used to optimize optical oxygen sensors, to measure oxygen flux through tissues and in skin tumors, and for oxygen imaging.^{1,3-6}

References

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3. Rumsey, W.L., Vanderkooi, J.M., and Wilson, D.F. *Science* **241(4873)**, 1649-1651 (1988).
4. Liebsch, G., Klimant, I., Frank, B., et al. *Appl. Spectrosc.* **54(4)**, 548-559 (2000).
5. Bacon, J.R. and Demas, J.N. *Anal. Chem.* **59(23)**, 2780-2785 (1987).
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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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