

AE-434: Preparation of stock solutions for the irradiation of [Ru(bpy)₃]Cl₂ * 6 H₂O

Date: 2025-02-03

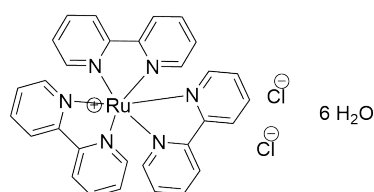
Tags: [Ru(bpy)₃]Cl₂*6 H₂O Stocksolution AE HTE

Category: HTE

Status: Done

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Reaction scheme/sample structure



[Ru(bpy)₃]Cl₂ * 6H₂O
Chemical Formula: C₃₀H₃₆Cl₂N₆O₆Ru
Molecular Weight: 748,62400

Chemical Formula: CHNaO₃
Molecular Weight: 84,00577

Na₂S₂O₈
Chemical Formula: Na₂O₈S₂
Molecular Weight: 238,09154

NaHCO₃

Na₂CO₃
Chemical Formula: CNa₂O₃
Molecular Weight: 105,98754

H₂O
water
Chemical Formula: H₂O
Molecular Weight: 18,01500

Literature/reference experiments

| | |
|---------------------------|--|
| Literature | https://doi.org/10.1021/acscatal.6b02595 |
| Reproduction | HTE - MRG-059-ZO: Irradiation of [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O in the ChemSpeed robot - repetition of experiments from -ZN with not reproducible results (MRG-ZO-059-7) |
| Related experiment | HTE - AE-383: Preparation of stock solutions for the irradiation of [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O HTE - AE-405: Preparation of stock solutions for the irradiation of [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O I HTE - AE-414: Preparation of stock solutions for the irradiation of [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O HTE - AE-422: Preparation of stock solutions for the irradiation of [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O |

Prepared solutions

| Name | Chemical | Cas Number | Amount [mmol] | Mass _{theo} [mg] | Mass _{exp} [mg] | Molar mass [g/mol] | Volume(added Milli-Q water) [mL] | Optained conc. |
|------------|---|----------------------------|---------------|---------------------------|--------------------------|--------------------|----------------------------------|----------------|
| Ru II | [Ru(bpy) ₃]Cl ₂ * 6 H ₂ O | 50525-27-4 | 2.0 µmol | 1.49 | 1.42 | 748.62 | 9.53 | 200 µM |
| Ox III | Sodium persulfate | 7775-27-1 | 1.8 | 428.56 | 429.44 | 238.09 | 10 | 120 mM |
| NaHC O3 II | Sodiumhydrogen carbonate | 144-55-8 | 10 | 840.06 | 839.56 | 84.006 | 10 | 1 M |
| Na2C O3 II | Sodium carbonate (anhydrous) | 497-19-8 | 3 | 317.96 | 317.65 | 105.988 | 10 | 0.3 M |

Procedure/observations

| Date | Time | Step | Observations |
|-------|-------|--|--------------|
| 03.02 | 15:10 | Each chemical, was weighed in a saperate 15 mL snap-on cap vial. | |
| | 15:20 | To each vial Milli-Q water (see Prepared solutions table) was added using a 2 figure scale. | |
| | 15:25 | All samples were shortly vortexed to obtain/ensure a homogeneous solution (Vortex VWR VV3, 4/6 intensity of shaking) | |
| | 15:35 | The solutions were transffered into Chem Speed Vials | |

Linked experiments

- AE-265: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- AE-270: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- AE-311: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O I
- AE-323: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- AE-334: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- AE-342: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O I
- HTE - AE-365: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-368: Preparation of stock solutions of [Ru(pby)3]Cl2 * 6 H2O
- HTE - AE-369: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-372: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-380: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O I
- HTE - AE-383: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-395: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-405: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O I
- HTE - AE-414: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - AE-422: Preparation of stock solutions for the irradiation of [Ru(bpy)3]Cl2 * 6 H2O
- HTE - MRG-059-ZO: Irradiation of [Ru(bpy)3]Cl2 * 6 H2O in the ChemSpeed robot - repetition of experiments from -ZN with not reproducible results



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