

## **Oxygen Evolving Reactions Catalysed by Synthetic Manganese Complexes: A Systematic Screening**

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### **Supporting Information**

**Table S1.** Selected properties of transition metal complexes.

**Table S2.** Selected properties of oxidation agents used.

**Table S1.** Selected properties of the studied metal complexes.

	metal centres	oxidation states	ligands bridging metals	echem: at least one reversible oxidation	O <sub>2</sub> evolution reported
1	2 x Mn	II, II	Φ-O <sup>-</sup> , AcO <sup>-</sup>	yes	no
2	2 x Mn	II, III	Φ-O <sup>-</sup> , AcO <sup>-</sup>	yes	no
3	2 x Mn	III, III	Φ-O <sup>-</sup> , AcO <sup>-</sup>	no	no
4	4 x Mn	II,III,IV,II	R-O <sup>-</sup> , O <sup>2-</sup> , OH <sup>-</sup>	no	no
5	2 x Mn	II, II	R-COO <sup>-</sup>	no	yes
6	2 x Mn	III, IV	O <sup>2-</sup>	no	yes
7	2 x Ru	III, III	O <sup>2-</sup>	yes	yes

abbreviations: Φ-O<sup>-</sup>: phenolate, AcO<sup>-</sup>: acetate

**Table S2.** Selected properties of oxidation agents used.

	H <sub>2</sub> O <sub>2</sub>	TBHP	HSO <sub>5</sub> <sup>-</sup>	ClO <sup>-</sup>	Ce <sup>4+</sup>	Ru <sub>photo</sub>
approx. oxidation potential vs. NHE [V]	+ 0.9	+ 0.7	?	+ 0.4 <i>or</i> + 0.6	+ 1.5	+ 1.5
electrons transferred per oxidant	0 <i>or</i> 2	2	2	1 <i>or</i> 2	1	1
potential oxygen transfer agent	yes	yes	yes	yes	no	no
peroxo-oxygen(-I)	yes	yes	yes	no	no	no
pH of reagent	~7	~7	~2	~9	~2	~4
other potentially reactive species in the reaction mixture	no	no	no	Cl <sub>2</sub> , Cl <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	Cl <sup>•</sup> , Cl <sup>-</sup> , Co <sup>II</sup> complexes
reaction stoichiometry used	2 eq.	50 eq.	50 eq.	50 eq.	50 eq.	0.5 eq.