Table 1. Comparison between heterogeneous catalysts for the conversion of glycerol to solketal.

Catalyst	**Catalyst loading (relative to glycerol)**	**Acetone to glycerol molar ratio**	**Solvent**	**Reaction time**	**Reaction temperature (°C)**	**Others**	**Glycerol conversion (%)**	**TON**	**Ref.**
Amberlyst-36	5 wt%	1.5	dichloromethane	8 h	38-40	Formed water was removed continuously by Dean-Stark trap	88	33	[19]
Amberlyst DPT-1	5 wt%	2	-	4 h	70		100	-	[20]
Zeolite USY	13 wt%	1.2	-	40 min	70	-	60	22	[21]
Zeolite Beta	19 wt%	1.2	-	40 min	70	-	90	33	[21]
K10 montmorillonite	10 wt%	20	-	2 h	60	Formed water was removed continuously with zeolite NaA	82	178	[22]
Arenesulfonic acid-modified mesostructured silica (Ar-SBA-15)	5 wt%	6	-	30 min	70	Formed water and the excess of acetone were removed by a two-step batch mode operation	90	184	[23]
Tungstophosphoric acid immobilized on silica	5 wt%	6		4 h	70	-	100	121	[24]
Hf-TUD-1	3 wt%	1	-	6 h	80	-	52	1920	this work

Turnover number (TON) is moles of glycerol converted per mole of acid sites.