

Supplementary Information

**Zeolitic imidazolate framework composite membranes and thin films: Synthesis and applications**

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**S-Table 1.** Detailed separation data of mixed binary gas (1:1) shown in Table 3..

Type	Separation factor (Permeance of the first component, $10^{-7}$ mol m <sup>-2</sup> s <sup>-1</sup> pa <sup>-1</sup> )					Ref.
	H <sub>2</sub> /N <sub>2</sub>	H <sub>2</sub> /CO <sub>2</sub>	H <sub>2</sub> /CH <sub>4</sub>	C <sub>3</sub> H <sub>6</sub> /C <sub>3</sub> H <sub>8</sub>	CO <sub>2</sub> /CH <sub>4</sub>	
ZIF-8	-	-	11.2 (0.508)	-	-	29
ZIF-8	-	-	-	-	4.1-7.0 (169-243)	35
ZIF-8	-	6.5 (1.0)	17 (1.0)	-	-	36
ZIF-8	-	-	-	~50 (0.3)	-	40
ZIF-8	-	-	-	30.1 (0.11)	-	41
ZIF-8	-	7.1 (1.7)	-	-	-	43
		(45/55 H <sub>2</sub> /CO <sub>2</sub> )				
ZIF-7	7.74 (0.785)	6.48 (0.771)	5.92 (0.796)	-	-	46
ZIF-7	18 (0.442)	13.6 (0.455)	14 (0.436)	-	-	48
ZIF-7	-	8.4 (0.09)	-	-	-	50
ZIF-69	-	-	-	-	4.6 (1.02)	51
ZIF-22	6.4 (1.88)	7.2 (1.66)	5.2 (1.72)	-	-	64
ZIF-90	11.7 (2.48)	7.3 (2.37)	15.3 (2.51)	-	-	65
ZIF-90	15.8 (2.14)	15.3 (2.02)	18.9 (1.94)	-	-	66
ZIF-90	-	21.6 (2.96)	79.6 (2.96)	-	-	67
ZIF-90	-	-	-	-	4.7 (0.126)	78
ZIF-95	10.1 (21.8)	25.7 (19.5)	11.0 (20.4)	-	-	68
ZIF-8	11.06 (4.1)	3.28 (4.1)	12.13 (4.1)	-	-	69
ZIF-78	5.7 (1.03)	9.5 (0.97)	6.4 (1.02)	-	-	73
ZIF-8	4.94 (3.3)	7.31 (3.23)	4.84 (3.28)	-	-	81
ZIF-8	-	-	-	55 (~0.2)	-	88
ZIF-8	-	-	-	40.43±8.45 (~0.2)	-	89
	H <sub>2</sub> /C <sub>3</sub> H <sub>8</sub>	H <sub>2</sub> /C <sub>3</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>6</sub> /C <sub>3</sub> H <sub>8</sub>	C <sub>2</sub> H <sub>4</sub> /C <sub>3</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>4</sub> /C <sub>3</sub> H <sub>8</sub>	
ZIF-8	~390 (0.7)	-	-	-	-	36
ZIF-8	545 (4.36)	23 (3.84)	80 (0.723)	10 (1.47)	167 (1.5)	39