

Materials List for:

In situ FTIR Spectroscopy as a Tool for Investigation of Gas/Solid Interaction: Water-Enhanced CO₂ Adsorption in UiO-66 Metal-Organic Framework

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Materials

Name	Company	Catalog Number	Comments
Acetonitrile-D3	Uvasol, Merck	1.13753.0009	99.69% deuteration degree (for NMR spectroscopy)
Benzoic acid	Sigma Aldrich	242381-500G	C ₇ H ₆ O ≥99.5%
Carbon dioxide	Linde Gaz Magyarorszag	GA 473	99.9993% purity
Carbon monoxide	Merck-Schuchardt	823271	99.5% purity
Ethanol	Carl Roth	9065.1	99.8%
Glass sample holder			Self-made
HiCube80 Eco Turbo Pumping Station including HiPace 80 Turbo Pump, MVP 015 Diaphragm Vacuum Pump and DCU 002 Control Unit	Pfeiffer Vacuum	PM S74 150 00	
Horizontal glass IR cells for adsorption studies			Self-made
Methanol	Carl Roth	4627.5	≥99.9%
N,N-Dimethylformamide	Sigma Aldrich	33120-2.5L-M	99.8%
Nicolet 6700 FTIR spectrometer	Thermo Scientific		USA
Specac Atlas Manual 15T Hydraulic Press	Specac	GS 15011	
Terephthalic acid	Sigma Aldrich	185361-100G	98%
UiO-66			Synthesized at Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, Germany
Vacuum valve	Ellipse Labo	248.904	90° branches, Ø 0-4 mm
Vacuum valve	Ellipse Labo	248.910	90° branches, Ø 0-10 mm
Zirconium(IV) chloride	Sigma Aldrich	357405-10G	Anhydrous, 98%