Technical Data Sheet

ACS Material Covalent Organic Framework-LZU1

(COF-LZU1)

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Revision: 101017
1. Preparation Method

Type A: synthesized at room temperature and ambient atmosphere
Type B: Solvothermal synthesis

2. Characterizations

<table>
<thead>
<tr>
<th>Characterization</th>
<th>Details</th>
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<tbody>
<tr>
<td>Form</td>
<td>Powder crystal</td>
</tr>
<tr>
<td></td>
<td>A two-dimensional planar material with one-dimensional channels</td>
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<tr>
<td>Solubility</td>
<td>Insoluble in water or common organic solvents (N,N-dimethylformamide, tetrahydrofuran, dimethyl sulfoxide, acetone, trichloromethane)</td>
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<tr>
<td>Stability (Tg)</td>
<td>~310 °C</td>
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<tr>
<td>BET Surface Area</td>
<td>Type A: 200-300 m²/g</td>
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<td></td>
<td>Type B: ~500 m²/g</td>
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<tr>
<td>Pore Size</td>
<td>1.2 nm</td>
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</table>

Typical SEM Image of ACS Material COF-LZU1
FT-IR spectra of ACS Material COF-LZU1 (red), 1,3,5-triformylbenzene 1 (blue), and 1,4-diaminobenzene 2 (black).

Observed (black) and refined (red) PXRD profiles of ACS Material COF-LZU1 with an eclipsed arrangement, background profile (blue) and difference plot (purple, observed minus refined).
The architecture of ACS Material COF-LZU1 with a staggered arrangement
(For clarity, C blue and N red are shown only on the top layer, and H atoms are totally omitted.)

N₂ adsorption (filled symbols) and desorption (empty symbols) isotherms of ACS Material COF-LZU1 (cycles)-Type B
Langmuir surface area plot for ACS Material COF-LZU1 calculated from the isotherm-Type B

TGA data of ACS Material COF-LZU1

3. Application Fields
1) Metal Coordination Catalysis
2) Recognition of metal ions
3) Bio-Detection
4) Electrochemistry
5) Crystallography
6) Separation chemistry
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