

*Article*

# Efficient Inorganic/Organic Acid Leaching for the Remediation of Progenetic Lead-Contaminated Soil

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**Table S1.** Orthogonal experiment design of HCl leaching.

<b>Factor Level</b>	<b>Concentration (mol·L<sup>-1</sup>)</b>	<b>Solid-to-Liquid ratio (g·ml<sup>-1</sup>)</b>	<b>Stirring Time (h)</b>
1	0.05	1: 10	8h
2	0.1	1: 15	12h
3	0.2	1: 20	24h
4	0.5	1: 25	48h

**Table S2.** Orthogonal experiment design of CA leaching.

<div>Factor</div> <div>Level</div>	Concentration (mol·L <sup>-1</sup> )	Solid-to-Liquid ratio (g·ml <sup>-1</sup> )	Stirring Time (h)
1	0.03	1: 10	8h
2	0.05	1: 15	12h
3	0.07	1: 20	24h
4	0.09	1: 25	48h

**Table S3.** Orthogonal experiment results and analysis of HCl leaching.

No.	Stirring Time (h)	Concentration (mol·L <sup>-1</sup> )	Solid-to-Liquid Ratio (g·ml <sup>-1</sup> )	η (%)
1	8	0.05	1:10	0.137
2	8	0.1	1:15	0.136
3	8	0.2	1:20	65.7
4	8	0.5	1:25	72.2
5	12	0.05	1:15	0.174
6	12	0.1	1:10	0.109
7	12	0.2	1:25	68.1
8	12	0.5	1:20	72.7
9	24	0.05	1:20	0.155
10	24	0.1	1:25	8.50
11	24	0.2	1:10	0.579
12	24	0.5	1:15	74.0
13	48	0.05	1:25	0.788
14	48	0.1	1:20	0.159
15	48	0.2	1:15	51.8
16	48	0.5	1:10	69.9
<i>K</i> <sub>1</sub> (%)	138	1.26	70.7	-
<i>K</i> <sub>2</sub> (%)	141	8.91	126	-
<i>K</i> <sub>3</sub> (%)	83.2	186	139	-
<i>K</i> <sub>4</sub> (%)	123	289	150	-
<i>k</i> <sub>1</sub> (%)	34.5	0.314	17.7	-
<i>k</i> <sub>2</sub> (%)	35.3	2.23	31.5	-
<i>k</i> <sub>3</sub> (%)	20.8	46.6	34.7	-
<i>k</i> <sub>4</sub> (%)	30.7	72.2	37.5	-
<i>R</i> (%)	14.5	71.9	19.8	-

*K* values (*K*<sub>1</sub>, *K*<sub>2</sub>, *K*<sub>3</sub>, *K*<sub>4</sub>) were the sum of the results of each level and represented different levels of each factor between the minimum and the maximum in the orthogonal experiments; *k*<sub>*i*</sub> is the average of *K*<sub>*i*</sub>.

**Table S4.** Orthogonal experiment results and analysis of CA leaching.

No.	Stirring Time (h)	Concentration (mol·L <sup>-1</sup> )	Solid-to-Liquid Ratio	η (%)
1	8	0.01	1:10	0.79
2	8	0.05	1:15	6.65
3	8	0.1	1:20	61.81
4	8	0.2	1:25	63.51
5	12	0.01	1:15	0.89
6	12	0.05	1:10	4.63
7	12	0.1	1:25	63.40
8	12	0.2	1:20	60.97
9	24	0.01	1:20	0.95
10	24	0.05	1:25	61.48
11	24	0.1	1:10	8.79
12	24	0.2	1:15	61.46
13	48	0.01	1:25	0.63
14	48	0.05	1:20	5.40
15	48	0.1	1:15	26.54
16	48	0.2	1:10	18.91
<i>K</i> <sub>1</sub>	132.75	3.26	33.12	-
<i>K</i> <sub>2</sub>	129.89	78.16	95.54	-
<i>K</i> <sub>3</sub>	132.68	160.53	129.12	-
<i>K</i> <sub>4</sub>	51.48	204.85	189.02	-
<i>k</i> <sub>1</sub>	33.19	0.81	8.28	-
<i>k</i> <sub>2</sub>	32.47	19.54	23.89	-
<i>k</i> <sub>3</sub>	33.17	40.13	32.28	-
<i>k</i> <sub>4</sub>	12.87	51.21	47.25	-
R	20.32	50.4	38.97	-