

Supplementary Material

In the CHN analysis, the cystine standard was made to confirm that the equipment is calibrated, the Bent bentonite clay sample before the ammonium acetate (AmAC) process and the clay after the Bent-AmAC ammonium acetate process as described in section 3.2. The CEC result of the bentonite clay was 75 cmol(+)/kg, as shown in Table S1.

Table S1. CNH analysis of Bent clays without ammonium acetate and Bent-AmAC with ammonium acetate.

| Run Details | | Results | | | | CEC | Average CEC | CEC standard deviation |
|-------------|--------|---------|----------|----------|----------------------|------------|-------------|------------------------|
| Run | Weight | Carbon | Hydrogen | Nitrogen | mmol de N/ g of clay | cmol(+)/kg | cmol(+)/kg | cmol(+)/kg |
| C | 1.493 | 29.86 | 4.71 | 11.58 | | | | |
| C | 1.695 | 30.16 | 5.27 | 11.7 | | | | |
| Bent | 1.595 | 0.11 | 1.14 | - | | | | |
| Bent | 1.835 | 0.33 | 0.96 | - | | | | |
| Bent | 1.478 | 0.37 | 1 | - | | | | |
| Bent-AmAC | 1.923 | 1.06 | 1.34 | 1.03 | 0.736 | 73.571 | | |
| Bent-AmAC | 2.237 | 1.02 | 1.34 | 1.08 | 0.771 | 77.143 | 75.238 | 1.798 |
| Bent-AmAC | 1.944 | 1.04 | 1.34 | 1.05 | 0.750 | 75.000 | | |

C corresponds to the cystine pattern. Reference values are: C 29.99% H 5.03% N 11.67% and S 26.69%