Claims

1. A compound having a formula MoO_2Cl_2 in crystalline form and having an orthorhombic crystal system, and unit cell dimensions of about

a = 13.552 Å α= 90°

b = 5.456 Å β= 90°

c = 5.508 Å γ = 90.

2. The compound of claim 1, which exhibits a powder XRD pattern with one or more peaks at 12.94, 23.64, 26.10, 39.50, and/or 40.28 ± 0.04 degrees 2-theta.

3. The compound of claim 1, which has a powder XRD pattern as depicted in Figure 5.