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| **Feature (cm-1)** | **Uranyl Mineral Group** | **Assignment** | **Reference** |
| 811 | arsenates | ν1UO22+ , ν1AsO43- , ν3AsO43- | Plášil 2010 |
| 895 | arsenates | ν1AsO43- , ν3UO22+ \* | Plášil 2010, Driscoll et al., 2014 |
| 450-525 | arsenates | ν2AsO43- ,ν4AsO43- | Plášil 2010 |
| 320-380 | arsenates | ν2AsO43- | Plášil 2010 |
| 1375-1400 | carbonates | ν3CO32- | Bonales et al., 2016, Frost et al., 2009, Driscoll et al., 2014 |
| 1025-1150 | carbonates | ν1CO32- | Bonales et al., 2016, Driscoll et al., 2014 |
| 824-851 | carbonates | ν1UO22+ | Bonales et al., 2016 |
| 760 | carbonates | δCO32- out of plane deformation | Bonales et al., 2016, Driscoll et al., 2014 |
| 728 | carbonates | δCO32- in plane bending | Bonales et al., 2016, Driscoll et al., 2014 |
| 1440-1500 | hydroxides/ oxyhydrates | δ-U-OH bending, ν1 and ν2UO22+ combination bands and overtones | Frost et al., 2007, Colmenero et al., 2019 |
| 754-832 | hydroxides/ oxyhydrates | ν1UO22+ | Frost et al., 2007 |
| ~800 | molybdates | ν1UO22+ | Frost et al., 2008 |
| 368-470 | molybdates | ν1MoO42- | Frost et al., 2008 |
| 990-1021 | phosphates | ν1PO43- , ν3PO43- | Frost et al., 2004, Driscoll et al., 2014 |
| 740-870 | phosphates | ν1UO22+ | Frost et al., 2004, Driscoll et al., 2014 |
| 560-660 | phosphates | ν4PO43- | Driscoll et al., 2014 |
| 370-480 | phosphates | ν2PO43- , | Driscoll et al., 2014 |
| 790-855 | selenites | ν1SeO32- | Frost et al., 2006 |
| 680-775 | selenites | ν3SeO32- | Frost et al., 2006 |
| ~460 | selenites | ν2SeO32- | Frost et al., 2006 |
| 387-418 | selenites | ν4SeO32- | Frost et al., 2006 |
| 925-1025 | silicates | νSiO44- | Frost et al., 2005 |
| 700-850 | silicates | ν1UO22+ | Frost et al., 2005 |
| 450-650 | silicates | δ, ν4 SiO44- | Frost et al., 2005 |
| 1000-1179 | sulfates | ν1SO43- , ν3SO43- | Frost et al., 2005, Makreski et al., 2005 |
| 778-880 | sulfates | ν1UO22+ | Frost et al., 2005, Makreski et al., 2005 |
| 625-670 | sulfates | ν4SO43- | Frost et al., 2005, Makreski et al., 2005 |
| 420-450 | sulfates | ν2SO43- | Frost et al., 2005, Makreski et al., 2005 |
| 950-975 | vanadates | ν1VO3 | Frost et al., 2005 |
| ~860 | vanadates | ν1UO22ǂ | Frost et al., 2005 |
| ~750 | vanadates | ν2VO5, ν3VO5 | Frost et al., 2005 |
| 450-575 | vanadates | U-O equatorial modes | Frost et al., 2005 |
| ~370 | Vanadates | V2O2 bending | Frost et al., 2005 |
| \* ν3UO22+ are unlikely without significant structural disorder, ν3 is Raman silent based upon selection rules.  ǂ Less intense than V-O modes at 750 cm-1 | | | |