|  |
| --- |
| Uranium |
| Taken µg ml-1 | Found µg ml-1 | Recovery\*\* % |
| 20406080100 | 20.0939.3659.6779.12100.2 | 100.4598.4099.4598.90100.2 |
| Mean recovery\* 99.48±0.860N 5Variance 0.740S.E 0.384Molar absorpitivity [9.57×10](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)[3](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)[(1mol](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)[-1](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0) [cm](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)[-1](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)[)](http://en.wikipedia.org/wiki/Charge-transfer_complex%22%20%5Cl%20%22_note-0)Sandell’s sensitivity 2.4×10ˉ2(µg cmˉ²)t-test 0.3F-test 1.09 |

**Table 1.** Determination of pure uranium using roxarsone at λmax 395 nm.

(\*)Mean ± S.D. (\*\*)Average of three experiments.

**Table 2.** Determination of uranium in 100 ppm uranium ore by complexation with roxarsone using standard addition technique.

|  |
| --- |
| uranium ore 100 ppm  |
| Recovery\*\* % | addedµg ml-1 | Takenµg ml-1 |
| 10110299.698.198.2 | 1535557595 | 55555 |
| Mean recovery\* 99.78±1.72N 5 Variance 2.94 S.E 0.768 t-test 0.51F-test 4.32 |

 (\*)Mean ± S.D. (\*\*)Average of three experiments.

**Table 3.**  Effect of some common ingredients on the determination of uranium using roxarsone

|  |  |
| --- | --- |
| Uranium | Other Ingredients 10 µg. added  |
| Recovery\*% | µg ml-1taken |
| 99.69998.7100.399.8 | 6060606060 | ــــــclayslitsand carbonate |

(\*) Average of three experiments

 **Table 4 .** Effect of some common interfering ions on the determination of uranium using roxarsone

|  |  |
| --- | --- |
| Uranium | Other Ingredients added  |
| Recovery\*% | µg ml-1taken |
| 99.69998.7100.399.499.89998.899.198.798.6 | 6060606060606060606060 | ــــــMn (II) 150Ca (II) 150Fe (III) 150Ni (II) 150Co (II) 150Cu (II) 150Al (III) 150Zr (IV) 150Mo (VI) 120Pb (II) 120  |

 (\*) Average of three experiments.

**Table 5.** Evaluation of the accuracy and precision of the proposed methods

|  |  |
| --- | --- |
| Compared method Statistical parameter |  Uranyl acetate |
| Taken µg ml-1 | 20 | 60 | 100 |
| Found ± SDª | 19.8±0.01 | 60.3±0.02 | 99.7±0.02 |
| RSD(%) | 0.071 | 0.035 | 0.047 |
| SAE b | 0.063 | 0.009 | 0.010 |
| Confidence limit c | 0.012 | 0.018 | 0.020 |

ª Mean ± standard deviation for five determinations.

b Standard analytical error .

c Confidence limits at P = 0.95 and 4 degree of freedom .