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POLYHALITE K-Ar RADIOMETRIC AGES FROM SOUTHEASTERN NEW MEXICO

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This paper lists four new radiometric K-Ar age determinations for polyhalites from southeastern New Mexico. These new data are compared with seven published ages by Brookins and others (1980). The new (nos. 1–4) samples were chosen because they were mixed with halite and sylvite, although the exact halide content could not be determined from x-ray diffractometry. Nor can it be stated with certainty that other halides and/or other evaporite minerals are present or not. The detailed geology, mineralogy, chemistry and precise sample locations are given in SAND (1978). Earlier studies of langbeinite and langbeinite-sylvite mixtures have been reported in this journal by Schilling (1973), and will not be repeated here except to note that a distinct lowering of K-Ar ages with increasing sylvite content was noted. The purpose of this note is to see if similar effects are noted for polyhalites. The K-Ar analyses and age calculations were carried out by Geochron Laboratories, Inc., Cambridge, Mass.

1. *E9-15-b* K-Ar
Massive, pink polyhalite with minor impurities. (ERDA-9 drill hole, 1215.2–1215.3 ft, Eddy Co., NM). *Analytical data:* K = 12.24%, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 0.1928 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 93.6%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(polyhalite) 209 ± 7 m.y.
2. *E9-84-b* K-Ar
Massive, pink polyhalite with visible halite (± sylvite?). (ERDA-9 drill hole, 1784.2–1784.3 ft, Eddy Co., NM). *Analytical data:* K = 12.69%, ^{40}Ar = 0.1754 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 96.0%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(impure polyhalite) 184 ± 6 m.y.
3. *E9-91* K-Ar
Impure polyhalite; small cracks filled with halite and possibly sylvite. (ERDA-9 drill hole, 1891.7–1891.9 ft, Eddy Co., NM). *Analytical data:* K = 12.72%, ^{40}Ar = 0.1788 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 91.1%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(impure polyhalite) 187 ± 7 m.y.
4. *MCC-121-b* K-Ar
Impure polyhalite; massive pink polyhalite with minor halite. (Mississippi Chemical Corp. Mine, marker bed 121 near Pleistocene Rubble Chimney, Eddy Co., NM). *Analytical data:* K = 12.77%, ^{40}Ar = 0.1755 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 96.1%. *Collected by:* S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(impure polyhalite) 183 ± 6 m.y.
5. *E9-15-a* K-Ar
Very pure polyhalite. (ERDA-9 drill hole, 1215.2–1215.3 ft, Eddy Co., NM). *Analytical data:* K = 12.34%, ^{40}Ar = 0.1957 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 76.8%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(polyhalite) 216 ± 7 m.y.
6. *E9-59* K-Ar
Very pure polyhalite. (ERDA-9 drill hole, 1959.1–1959.8 ft, Eddy Co., NM). *Analytical data:* K = 11.88%, ^{40}Ar = 0.1848 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 86.2%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(polyhalite) 212 ± 7 m.y.
7. *E9-84-a* K-Ar
Very pure polyhalite. (ERDA-9 drill hole, 1784.2–1784.3 ft, Eddy Co., NM). *Analytical data:* K = 12.40%, ^{40}Ar = 0.1811 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 92.9%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(polyhalite) 200 ± 7 m.y.
8. *MCC-rc* K-Ar
Pure polyhalite. (Mississippi Chemical Corp. Mine; from xenolith in rubble chimney near marker bed 121; Eddy Co., NM). *Analytical data:* K = 11.30%, ^{40}Ar = 0.1756, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 87.1%. *Collected by:* S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(polyhalite) 212 ± 7 m.y.
9. *E9-99* K-Ar
Impure polyhalite; contains sylvite and halite. (ERDA-9 drill hole, 1499.0–1500.0 ft, Eddy Co., NM). *Analytical data:* K = 11.72%, ^{40}Ar = 0.1485 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 89.9%. *Collected by:* D. Brookins, S. J. Lambert. *Analyzed by:* Geochron Laboratories, Inc.
(impure polyhalite) 174 ± 6 m.y.
10. *A8-18* K-Ar
Impure polyhalite; contains sylvite plus halite. (AEC-8 drill hole, 1618.9–1619.4 ft, Eddy Co., NM). *Analytical data:* K = 12.20%, ^{40}Ar = 0.1352 ppm, $^{40}\text{Ar}/\Sigma^{40}\text{Ar}$ = 87.4%. *Collected by:* D. Brookins, S. J. Lambert.

bert. *Analyzed by:* Geochron Laboratories, Inc.
(impure polyhalite) 154 ± 15 m.y.

11. *MB76-22* K-Ar
Polyhalite mixed with halite and sylvite, from contact zone of evaporites intruded by lamprophyre dike (Kerr-McGee Potash Mine, Lea County, NM). *Analytical data:* K = 12.14%, $^{40}\text{Ar} = 0.01807$ ppm $^{40}\text{Ar}/\Sigma^{40}\text{Ar} = 31.7\%$. *Collected by:* Marc Bodine, Jr.
Analyzed by: Geochron Laboratories, Inc.
(impure polyhalite) 21.4 ± 0.8 m.y.

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