400609

DECLASSIFIED

Copy

ENGEBI ISLAND SAND PARTICLE

While searching for counting material for an experiment to determine backscatter, some coral sand collected in 1948 about 200 yards from the crater on Engebi Island was surveyed. Much of the sample was of a low count, but single "hot" particles were found. The highest count of a single particle was 12,800 per minute for a sample that weighed 0.0024 grams. The sample was counted in an internal methane flow counting chamber (Nucleometer) for which the geometry is assumed to be 50%, and on a .005" stainless steel plate for which the backscatter for P^{32} has determined to be 30%. Correcting the sample count for weight of sample, for geometry, and for backscatter, the number of disintegrations per second per gram of material is calculated as being 130,000* or equivalent to 3-1/2 microcuries. The activity of the single particle was approximately 1/100 of a microcurie.

No alpha activity was present as indicated by the count obtained from the Nucleometer operated in the proportional range and from the U.C.L.A. model alpha scintillation counter.

The isotope has not been identified. The particle was not attracted by a magnet. The absorption curve suggest at least two isotopes with the greatest count from an isotope that has a range in aluminum of 600+ milligrams per square centimeter which is equivalent to an energy of approximately 1.35 Mev. Assuming that the particle is a fission product, age at time of counting was greater than two years.

From NMB-N

1385

5/22/50

$$*\frac{(12800)(2)(.75)}{(60)(.0024)} = 130{,}000 \text{ (app)}$$

$$\frac{130{,}000}{(3.6)(10^{10})} = 3\text{-}1/2 \text{ microcuries (app)}$$

$$\frac{(12{,}800)(2)(.75)}{(60)(3.6 \times 10^{10})} = .01 \text{ microcurie (app)} \qquad \frac{130{,}000}{3.6 \times 10^{10}} = 3\text{-}1/2 \text{ Mcuries}$$

DECLASSIFIED