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## Release Kinetics of Nicotinamide from Fatty Acid-Nicotinamide Equimolar Complexes. I Release Characteristics of Fatty Acid Complexes\*

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The rates of release of nicotinamide (NAA) from fatty acid (FA)-NAA complexes, FA-NAA, were determined in a JP XI dissolution test apparatus in 500 ml of JP XI disintegration test medium No.1 at 37 °C. The release rate constant ( $k$ ) and the activation Gibbs energy ( $\Delta G^\ddagger$ ) for the release of NAA from FA-NAA were estimated. The results obtained for FA-NAA were compared with previous results obtained for the thiamine disulfide (TDS) complex, (FA)<sub>6</sub>(TDS).

The plots of  $\log k$  against the carbon number of the constituent FA ( $n$ ) presented a zig-zag line which indicates a downward convex at an odd-numbered position. The plots of  $\Delta G^\ddagger$  against  $n$  showed a zig-zag line with an upward convex at an odd-numbered position, though the positive value of  $\Delta G^\ddagger$  increased rather regularly with an increase of  $n$  for either even-numbered or odd-numbered FA.

The phenomena that the plots of  $\log k$  vs.  $n$  and  $\Delta G^\ddagger$  vs.  $n$  show zig-zag lines due to the difference between even- and odd-numbered FA were the same as observed previously for the release of TDS from (FA)<sub>6</sub>(TDS).

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