Inorganic clathrates have provided a platform for rich intercalation chemistry and have been used widely in application. Among these, the inner cavity space rarely affects the electronic structure of the framework. We report that the anti-ReO$_3$-type compound Na$_3$N has a metallic nature irrespective of the stoichiometric chemical composition of simple representative elements and that this unusual nature originates from the collapse of the bandgap owing to the presence of a crystallographic cavity. We synthesized Na$_3$N by the plasma-assisted nitridation of alkali metals, and diffuse reflectance measurements indicated a metallic nature. The crystallographic cavity in the nitride interacted with Na and N to modify the electronic structure, resulting in the collapse of the bandgap. Na$_3$N is a unique nitride, which possesses an electronically active cavity space.