IV CONCLUSION

Previously, Simon 16, Saxena 17 et al. and Brown 18 have calculated certain elastic properties of sodium. Saxena 17 et al. calculated the binding energy and compressibility both for bcc and hcp phases; however, the Born repulsive term was not included. Simon 16 has done similar calculations on the elastic modulus and its first pressure derivative using an improved theory of Gombas. 19 The theoretical results were compared with experimental values obtained by Diederichs and Trivisonno 20 and Daniels 21 . Quite a discrepancy was found for the bulk modulus and its pressure derivative. The present calculation shows much better agreement between the theoretical values and experimental values for the isothermal bulk modulus and its first pressure derivative. is a slight discrepancy in the second pressure derivative. However, if we consider the simplicity of the theory and the fact that there is an estimated 10% standard error in the experimental value for the second derivative the result is actually fairly good.

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