Mismeasurement in both quantitative and categorical covariates are common in epidemiological studies. Regression analysis ignoring such mismeasurements seriously biases the estimated main and interaction effects of the covariates on the outcome of interest. In this research, we propose a Bayesian parametric framework for eliminating deleterious impacts of covariate mismeasurements in logistic regression. Furthermore, adjustment for covariate mismeasurements requires validation data, usually in the form of replicates of the mismeasured covariates on a subset of the study population. Adequacy of the proposed adjustment method depends on the sizes of the main and the validation samples. Thus, we also provide a general guideline about the required sizes of the main and the validation samples based on simulation studies.