Traditionally artistic color concepts play an important role in the analysis of artworks. This paper discusses a method for analyzing and representing artistic color concepts such as color temperature, color palette and color contrasts in paintings domain. The color concept definitions rely on the widely accepted color theory of Itten. Our method starts with the extraction of homogeneous color/texture regions from paintings. It then employs image processing and machine learning techniques to characterize regions in terms of artistic color concepts. We evaluate a proposed method using collection of 1000 modern art paintings, which exhibit vast variety of painting styles and artistic color concepts. Experiments show that our method performs well for vast variety of both spatial and non–spatial artistic color concepts queries.