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The Investigation of Precipitation Conditions of Chevreul's Salt

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Abstract : In this study, the precipitation conditions of Chevreul’s salt were evaluated. The structure of Chevreul’s salt was examined by considering the previous studies. Thermodynamically, the most important precipitation parameters were pH, temperature, and sulphite-copper(II) ratio. The amount of Chevreul’s salt increased with increasing the temperature and sulphite-copper(II) ratio at the certain range, while it increased with decreasing the pH value at the chosen range. The best solution medium for recovery of Chevreul’s salt is sulphur dioxide gas-water system. Moreover, the soluble sulphite salts are used as efficient precipitating reagents. Chevreul’s salt is generally used to produce the highly pure copper powders from synthetic copper sulphate solutions and impure leach solutions. When the pH of the initial ammoniacal solution is greater than 8.5, ammonia in the medium is not free, and Chevreul’s salt from solution does not precipitate. In contrast, copper ammonium sulphide is precipitated. The pH of the initial solution containing ammonia for precipitating of Chevreul’s salt must be less than 8.5.

Keywords : Chevreul's salt, production, copper sulfites, copper compound
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