



反応性樹脂の量産品質の安定化

— 工程解析における MT システムの活用 —

Stabilization of Quality of Mass-produced Reactive Resins

— Utilization of MT System in Process Analysis —

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Manufacturing processes for chemical products are often defined in terms of process control parameters and their center values and control ranges. Center values are optimal values found through, e.g., parameter design; control ranges are often determined empirically. Despite such process control, however, the manufactured products are sometimes out-of-spec. When this happens, steps must be taken to keep the problem from recurring: for example, by narrowing the control ranges of the parameters involved. Until the problem is eliminated, all outgoing products have to be inspected before shipment. To maintain stable high-volume production, solutions to such problems need to be found quickly. This paper describes how the MT-system was used to set process control values in order to prevent the recurrence of a problem of out-of-spec coloration that could not easily be reproduced in the laboratory. Adjusting the production process to these values solved the problem. This case study demonstrated the usefulness of the MT-system in process analysis, and established an analytic procedure. Because of the restricted applicability of the MT-system, however, use of the T(1) method was also studied, and the conclusion was reached that the T(1) method might also offer solutions to such problems.

Key words : robust quality engineering, MT-system, MT method, T(1) method, process analysis, process control, Taguchimethods, S/N ratio

1. はじめに

化学製品の製造は一定品質の製品を製造するため

に工程の管理項目とその基準を定め、その基準を満たすように管理されている。管理項目は温度、流量などの計測値であるが、pH計などの分析値もある。基準は中心値と管理幅からなることが多い。

中心値はパラメータ設計などにより求めた最適と考えられる値であり、管理幅は経験的に決められることが多い。通常は、各管理項目の値が管理幅の中にあれば良いという管理である。すなわち管理幅内

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