



MTシステムを用いた化学物質の危険有害性 統合化指標作成における算定距離に及ぼす 単位空間の設定と数値化方法の影響

*Effect of Unit Space Setting and Method of Numerization on
Calculated Distances in Creation of an Integrated Index
of Chemical Hazards by the MT System*

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A method of using distances calculated by the Mahalanobis-Taguchi system (error root-mean-square method), based on the results of the classification of hazards according to GHS (Globally Harmonized System of Classification and Labelling of Chemicals), has been proposed as an index for showing the hazards posed by chemical substances in an integrated and intuitive way. In this report, the category data provided by the GHS hazard categories were numerized in several ways and an L_{18} orthogonal array was used to study the effects on the calculated distances of the setting of low hazard substances in the unit space, the treatment of unclassifiable substances (those with unknown properties, equivalent to missing data), the weighting of different hazards (selection of important hazards), and other factors. This led to a finding that in view of the quantity of substances in the unclassifiable category, a combination of selected substances and excluded substances was appropriate as the unit space, and that treating all unclassifiable substances as highly hazardous reduced the discriminative capabilities of the system. The tendencies of the numerization method and the weighting scheme to affect the calculated distances were also clarified.

Key words : S/N ratio, Taguchi methods, quality engineering, MT system, integrated index, chemical hazard, chemical substances, GHS

1. はじめに

化学物質の危険有害性には、物理化学的な危険性、

人の健康への有害性、環境生物への有害性などの多くの分野があり、全てを網羅的に理解することは難しい。そこで、危険有害性を直感的に認識できるものがあれば、一般消費者の役に立つと考え、GHS (化学品の分類および表示に関する世界調和システム, The Globally Harmonized System of Classification and Labelling of Chemicals) 分類

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