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## A Study on the Conversion Indicator of Organic Pollutant for Wastewater Effluent (III)

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Four petroleum manufactories of the 82 discharging facilities were investigated for the study of converting  $COD_{Mn}$  method to  $COD_{Cr}$  or TOC method. We measured and analyzed  $COD_{Mn}$ ,  $COD_{Cr}$ , and TOC of each sample from the manufactories. While the reliability( $R^2$ ) value(0.5~0.8) of correlation between  $COD_{Mn}$  and  $COD_{Cr}$  was relatively steady, the reliability range(0.1~0.9) of correlation between  $COD_{Mn}$  and TOC showed large fluctuation by each manufactory. Thus, the study results indicate that  $COD_{Cr}$  method is more remunerative than TOC method when converting organic matter index from  $COD_{Mn}$  method. Besides, some of the manufactories showed reverse correlation between  $COD_{Mn}$  and TOC: the TOC showed low concentration when the  $COD_{Mn}$  concentration was high. Therefore, conversion to TOC method has application problem. When the  $COD_{Cr}/COD_{Mn}$  regression equation was applied,  $COD_{Cr}$  conversion concentration was 155~250mg/L at Class one(daily discharge of over 2,000m<sup>3</sup>) and 217~346mg/L at Class two(daily discharge of below 2,000m<sup>3</sup>) based on "Na" area(preservation area of water quality, which is preserved Grade III,IV,V of water quality standard). On the other hand, the average organic matter concentration ratio of effluent from wastewater treatment facilities in four petroleum related manufactories ranged between 2.99~4.77 for  $COD_{Cr}/COD_{Mn}$  and 1.05~2.5 for TOC/ $COD_{Mn}$ .

Key words: Conversion Indicator,  $COD_{Mn}$ ,  $COD_{Cr}$ , TOC, Petroleum Manufactory, Effluent