

AMBIENT SURFACE WATER QUALITY
STANDARDS DOCUMENTATION

CHEMICAL: Theophylline

VALUE(S) ADDED

8-08-83

CAS NO.(s): 58-55-9

FACT SHEET REVISED _____

BASIS (Human/Aquatic): Human

VALUE(S) REMOVED _____

WATER CLASSIFICATION: AA; AA-s; A; A-s

STANDARD: 40 ug/l

Note B

REMARKS:

SUMMARY INFORMATION:

Available toxicity information on theophylline has been reviewed.^{1,2} There is inadequate information available to establish a guideline based on aesthetic effects. Theophylline has not been adequately tested to determine its oncogenic potential. A four-month study of theophylline toxicity in adults indicates that a daily oral dose of 6 mg/kg may be expected to product low serum theophylline concentrations without toxic effects in most individuals.³

STANDARD DERIVATION

Using the oral dose of 6 mg/kg and an uncertainty factor of 1000, an acceptable daily intake (ADI) of 6 ug/kg/day can be calculated. Assuming an ADI of 6 ug/kg/day, consumption of 2 liters of water per day, 20% of ADI from drinking water and a 70 kg adult, a guideline of 40 ug/l can be calculated. The guideline of 40 ug/l is recommended as the standard.

REFERENCES:

- (1) Rudolph, B.M. 1977. J. Tenn. Med. Assoc. 70, 171-174.
- (2) Timson, J. 1975. Mutation Res. 32, 169-178.
- (3) Jacobs, M.H. et al. 1976. JAMA 2.35, 1983-1986.

JS/pb