AMBIENT SURFACE WATER QUALITY
STANDARDS DOCUMENTATION

VALUE(S) ADDED 7-24-85

FACT SHEET REVISED _____

VALUE(S) REMOVED _____

CHEMICAL: Aminopyridine

CAS NO.(s): 462-08-8, 504-24-5, 504-29-0

BASIS (Human/Aquatic): Human

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

STANDARD: 1 ug/l Note B

REMARKS:

SUMMARY INFORMATION:

The three aminopyridine isomers are known to exhibit acute health effects in humans and are considerably more toxic, on an acute basis, than pyridine. Symptoms of acute intoxication include headache, hyperexcitability, increased blood pressure, muscular incoordination, respiration difficulties and convulsions. A review of the scientific literature[1-5] failed to uncover any pertinent information on the chronic toxicity of aminopyridines, including their mutagenic, carcinogenic, or teratogenic potential. In 90-day oral toxicity studies with 4-aminopyridine (unpublished)[5], rats received 0.15, 1.5 and 15 mg/kg/day and dogs received 0.1, 1.0 and 2.0 to 3.25 mg/kg/day. No significant pathological changes or compound-related effects in blood or urine were noted. The no-observed effect level (NOEL) was reported to be 0.15 mg/kg/day for rats and 0.1 mg/kg/day for dogs. Specific details regarding the experimental protocol or results have been requested but were not available for review.

STANDARD DERIVATION:

Using the rat NOEL (0.15 mg/kg/day) for 4-aminopyridine and an uncertainty factor of 1,000, an acceptable daily intake (ADI) of 0.15 ug/kg can be estimated for humans. A criterion of 1 ug/l can be calculated, assuming the 20% of the ADI is derived via the ingestion of 2 liters of water per day by a 70 kg human (Section 701.5). The level of 1 ug/l is recommended as the standard for aminopyridines.

REFERENCES:

(1) U.S.Department of Health and Human Services. 1978. NIOSH Occupational Health guideline for 2-Aminopyridine.

(2) Mitsov, V. 1972. Toxicity of the compound MI-w-3. Eksp. Med. Morfol., 11(3), 162-165 (Bulg.)

(3) Schafer, E., et al. 1974. Hazards to animals feeding on blackbirds killed with with 4-aminopyridine baits. J. Wildl. Mang. 39(3), 424-426.

(4) Schafer, E., et al. 1975. Long-term effects of 4-aminopyridine exposure to birds and fish. J. Wildl. Mang., 39(4), 807-811.

(5) U.S. Department of Health and Human Services. 1982. Surveillance Index Document for 4-aminopyridine. March 12, 1982.

TG/pb DEC 18 1984