

VALUE(S) ADDED 7-24-85  
FACT SHEET REVISED \_\_\_\_\_  
VALUE(S) REMOVED \_\_\_\_\_

Date: October 10, 1984

Surface Water Quality  
Standard Documentation

Chemical: Isothiazolones, total (isothiazolinones) (including, but not limited to, 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one)

C.A.S. No.(s):

Basis (Human/Aquatic): Aquatic

Standard by Water Classification:

|                           | <u>ug/l</u> | <u>Notes</u> |
|---------------------------|-------------|--------------|
| Classes AA,AA-s;A;A-s;B;C | 1           | J            |
| Class D                   | 10          | K            |
| Classes SA;SB;SC;I        |             |              |
| Class SD                  |             |              |

Remarks:

Summary of Information

The following is a summary of toxicity data for isothiazolones which was submitted to DEC by various water treatment chemical companies. The data are maintained in Department files.

1. Rohm and Haas-Kathon 886.

a. Technical Grade (pure isothiazolones).

- bluegill six day LC<sub>50</sub> = 0.96 mg/l
- channel catfish 120<sup>hr</sup> TL<sub>50</sub> = 0.19 mg/l
- rainbow trout 144 hr TL<sub>50</sub> = 0.25 mg/l
- fathead minnow 144 hr TL<sub>50</sub> = 0.25 mg/l

b. Blend (1.5% isothiazolones, but includes other potentially toxic chemicals in low concentrations)

- Daphnia 48hr LC<sub>50</sub> = .95 mg/l
- 0.95 X 0.015 = 0.0143 mg/l as total isothiazolones

2. Drew Biosperse 250 (as total isothiazolones).

- bluegill LC<sub>50</sub> = 0.54 mg/l
- channel catfish 120hr TL<sub>50</sub> = 0.106 mg/l
- rainbow trout 144hr TL<sub>50</sub> = 0.14 mg/l
- fathead minnow 144hr TL<sub>50</sub> = 0.14 mg/l

3. Mogul AG - 480F

-bluegill six day LC<sub>50</sub> = 0.54 ppm as total isothiazolones

Standard Derivation

The extreme toxicity of the blended water treatment chemical to Daphnia suggests that isothiazolones may be more toxic in conjunction with other chemicals but this information is difficult to use for deriving a water quality standard. Applying a factor of 0.01 to the rainbow trout and fathead minnow TL<sub>50</sub> (considered equivalent to LC<sub>50</sub>) data results in a value of 1 ug/l which is recommended as the standard for total isothiazolones in all freshwater classes except D. Applying a factor of 0.1 to the same data results in a value of 10 ug/l which is recommended as the standard for Class D.