Recommendation for Disposal

TransFix™ is designed for use in conjunction with blood or tissue samples collected for diagnostic purposes. Any reagent that has come in to contact with biological blood or tissues must be treated as Biohazardous Waste and must be disposed of in accordance with regulations in place for the disposal of such material (incineration).

TransFix™ contains <5g/l of dissolved manganese salts. The international recommendation is that solutions containing manganese must be disposed of at a concentration of less than 300µg/l. Waste TransFix must be diluted with 40x its own volume with tap water before disposal in waste water (sewerage).

Background Information

International Environmental Quality Standards

International Environmental Quality Standards (EQS) recommend that waste water must contain less than the following concentrations of Manganese at the time of disposal.

Fresh water disposal - < 300µg/l
Marine disposal - none required

The United States Environmental Protection Agency (USEPA) published a detailed report on the environmental impact of manganese in drinking water (Report No. EPA 822-R-03-003 published in February 2003). An excerpt from the Executive Summary is quoted below in which the USEPA states that regulation of manganese in public drinking water supplies is not required.

“The U.S. EPA has prepared this Health effects Support Document to assist in determining whether to establish a National Primary Drinking Water Regulation (NPDWR) for manganese. At high doses by inhalation, manganese is very toxic, as seen by exposure to miners. On the other hand, manganese is essential for normal physiological function in humans and animals. The Food and Nutrition Board of the National Academy of science (NAS) sets an adequate intake for manganese at 2.3mg/day for men and 1.8 mg/day for women, and an upper daily intake of 11mg for adults (IOM.2002). Manganese has a low aesthetic threshold in water. Based on staining and taste, EPA has set a secondary level of 0.05mg/l, which is below the level that may present a health concern. Available data suggest that regulation of manganese in public water does not present a meaningful basis for health reduction”.

Ecological Data

The following applies to manganese ions: toxic to water organisms. Inteference threshold for tubellarian worms (Polycelis nigra) 660mg/l, Eco (microregma) 31mg/ml, Fish toxicity: LC50 (orfe) 2490 mg/l, LC50 (trout 2.91 mg/l (28 days), Daphnia toxicity: LC50 (daphnia magna) 50 mg/l. Acute toxicity: pseudomonas putida 10.6mg/l, Phytobacterium phosphorem 14.7 mg/l.