Revision
1/24/02

Keyacid Rhodamine WT Liquid

Product Name: Keyacid Rhodamine WT Liquid
Product Code: 703-010-27

Typical Properties	
Appearance:	Clear, very dark red aqueous solution
Specific Gravity:	Approximately 1.15 @ 20°C.
pH:	10.8 ± 0.7 @ 2C
Dispersion in sea water:	Shows complete dispersion when dropped into seawater.
Bleachability:	Bleachable with sodium hypochlorite.
pH sensitivity:	No significant change in fluorescence between 5.5 and 11.0
Freezing point:	Approx. -10°C.
Viscosity:	Less than 25 centipoises @ 25°C

Keystone Aniline Corporation offers dyes specifically for water tracing (See TB 65) including **Keystone Rhodamine WT Liquid,** (Color Index, Acid Red 388). **Keyacid Rhodamine WT Liquid** is a bright fluorescent red dye with exceptionally high tinctorial strength and a low tendency to stain silt, dirt, organic (plants) and other suspended matter in fresh and salt waters. It is designed for water tracing by fluorometry or by visual methods and is detectable at 10 PPT (Parts Per Trillion) under ideal conditions with state-of-the-art fluorometers. The detectability in very polluted water is in the 0.1 ppb (Parts Per Billion) range.

Rhodamine WT liquid is approximately 50% the spectrophotometric strength of Rhodamine B with similar tinctorial impact and approximately 21% active dye content. For these reasons, it is used as a substitute for Rhodamine B in water tracing applications. However, in part because of its association with Rhodamine B, the safety and possible carcinogenicity of Rhodamine WT Liquid is questioned.

Among the support for the use of Rhodamine WT Liquid is a study conducted by SRI International of Menlo Park, CA. The study evaluated the risk level involved in exposure to trace levels of diethylnitrosamine (DENA) in streams in which a Rhodamine WT flow tracer was used. The study determined that the ability of Rhodamine WT to form DNEA in nitrite rich waters presented a negligible risk and well below the standard set by the EPA for drinking water. Rhodamine WT was granted clearance for use as a tracer dye in potable water applications. (4)

The Department of National Health and Welfare, Ottawa, Canada, published a study of the Mutagenic activity of the dye (5) in vitro and in vivo mammalian assays. The in vitro mammalian tests resulted in negligible or low levels of chromosomal anomalies and certain types of DNA damage even at very high concentrations of the dye. Furthermore, no evidence of in vivo genetic activity was observed either in terms of bone marrow micronuclei or sperm abnormalities.

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Keystone's Rhodamine WT Liquid is certified by the National Sanitation Foundation International (1), (NSF International) to ANSI/NSF Standard 60: Drinking Water Treatment Chemicals-Health Effects, for use in tracing drinking water under the following condition:

> "Concentrations of Rhodamine WT Liquid in drinking water are not to exceed 0.1 PPB and the exposure (end use) is to be infrequent"

According to Environmental /Water Quality Operational studies by the U.S. Army Corps of Engineers (2), "Rhodamine WT has been chosen as the dye most suitable for use in inflow studies…" and "poses no known environmental or health hazards when used in unpolluted water".

The suitability of this dye for a specific water tracing application should be evaluated by a qualified hydrologist. A manufacturer of fluorometers, (3) can be consulted for detailed application information. For precise scientific work, the user should carry out his own measurements on the starting material since there may be some variation from lot to lot.

In addition to providing the most comprehensive line of colorants available, at **Keystone Aniline Corporation** we are committed to arming our customers with the best technical information to provide them with a competitive advantage in the world marketplace. Call **1-800-522-4DYE** for samples or technical assistance.

Give us a call

As a Keystone Customer, you will have direct access to professionals who can answer technical questions and provide timely assistance. Please feel free to contact us for samples of our dyes, technical specifications, or for formulating assistance.

1. National Sanitation Foundation International
   3475 Plymouth Road
   Ann Arbor, MI 48113-0143
2. Chief of Engineers
   U.S. Army
   Washington, D.C. 20314
3. Turner Designs
   845 West Maude Avenue
   Sunnydale, CA 94086
4. *Rhodamine WT & B, Memo to F. J. Traina* April 10, 1980. Cotruvo, J.A.,
5. *Comparative Mammalian In Vitro and In Vivo studies on the Mutagenic Activity of Rhodamine WT*, Mutation Research, Vol. 118, (1983), pp. 117-125. Douglas, George R., et al.

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