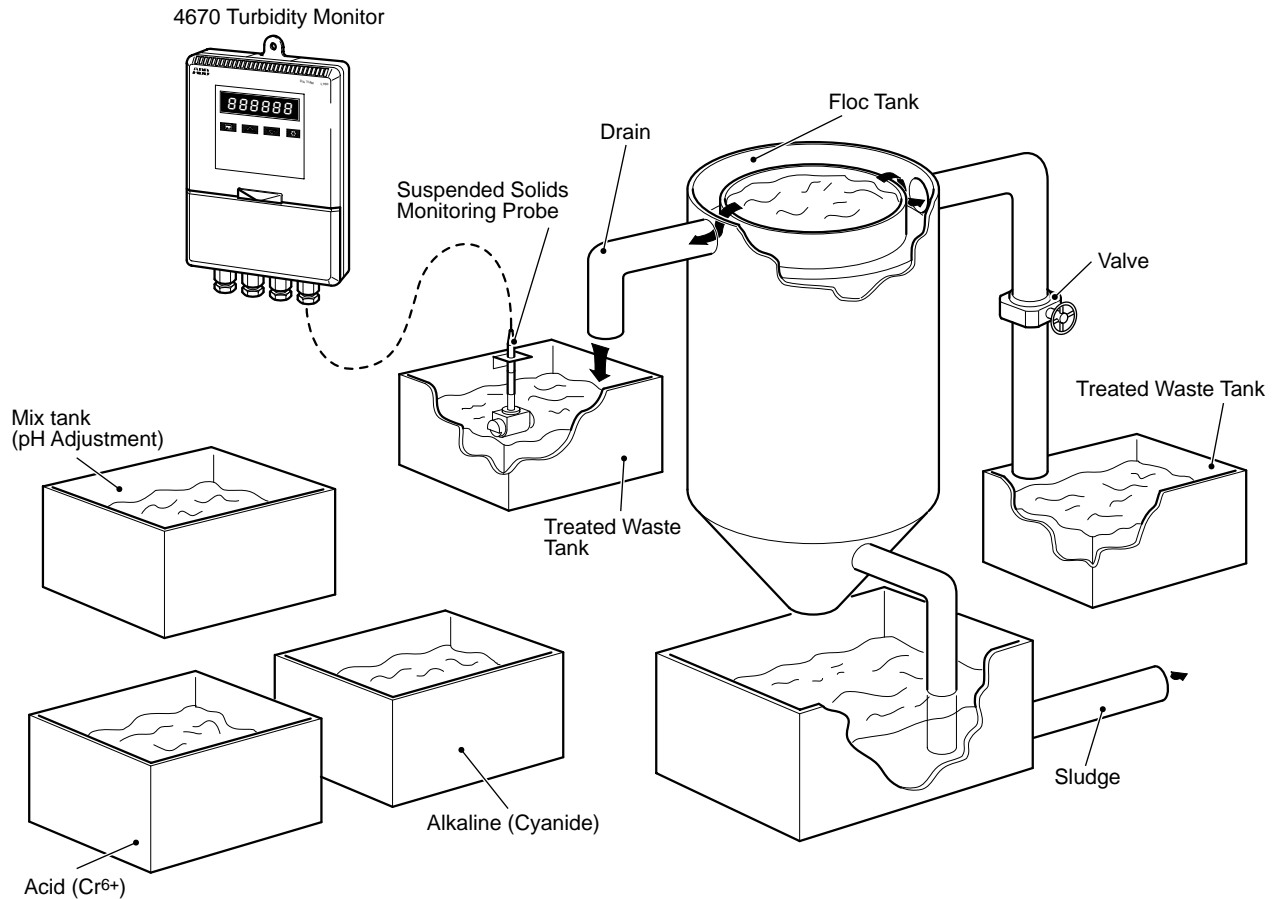


Suspended Solids Monitoring in Effluent Discharge from Electroplating Waste



The illustration above shows how process liquors are first treated in the cyanide or chrome tanks (see relevant Application Guides) then mixed in a mix tank where the pH is adjusted to between 8 and 9pH.

The liquor is then passed to the floc tank where floc is added allowing solids to settle out.

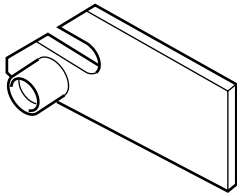
The 'clean' water is next gravity fed to the treated waste tank where the suspended solids monitoring probe is fitted (pH is also monitored for compliance).

Approximately 60% of the 'clean water' is recirculated for secondary use. If the level of suspended solids exceeds a pre-determined level, all of the waste water is sent to drain and fresh make-up water is introduced.

Why use a turbidity suspended solids monitoring system?

- ▶ To monitor the quality of water being discharged to waste to ensure compliance with Local Authority discharge limits and regulations.
- ▶ To enable a portion (up to 60%) of waste water to be recycled for secondary use – increasing plant economy.
- ▶ To reduce incoming and discharge volumes, therefore reducing load on the plant, saving money and minimizing use of a valuable resource.

Why use ABB Instrumentation?



Dry Calibration Standard for 4670/400

4 Operating Ranges Available:

Model 7997/160, value typically 60 – 80 FTU

Model 7997/161, value typically 450 – 550 FTU

Model 7997/162, value typically 700 – 800 FTU

Model 7997/163, value typically 100 – 160 FTU

- ▶ System is immune to ambient light – can be used in open channels.
- ▶ We offer the most reliable, cost-effective method of monitoring plant operation and efficiency.
- ▶ Provides accurate measurement below 5ppm (mg/l) – essential on discharge monitoring, but maintains performance up to 1000FTU to accurately follow changes in process conditions.
- ▶ Simple robust sensing system – minimal maintenance and easy calibration.
- ▶ Dry calibration standard has many advantages, e.g.:
 - Obviates the use of formazine – is safer, ensures repeatable accurate results and eliminates operator error.
 - Choice of dry standards – enables calibration to be carried out near or close to expected operating range and maximises accuracy.
 - Very robust – designed to avoid physical damage for long life performance.
 - Dry calibration standard storage container – to protect the standard when not in use for long life performance.
- ▶ Virtual life time zero, very stable electronics using LED technology – avoids risk of electronic drift.
- ▶ Auto cleaning on all systems except low level monitor – extends maintenance periods and optimizes performance on dirty water applications.
- ▶ LED technology – reduces risk of algae buildup as no heat is generated.
- ▶ Suspended solids capability – unit can be calibrated in mg/l or ppm in addition to NTU/FTU – essential on sewage discharge.
- ▶ Robust no fuss emitter and receiver – no special positioning required, can easily be removed and replaced for maintenance purposes. Double sealed with silica gel driers to avoid internal condensation.
- ▶ High immunity to temperature fluctuations – unique design minimises error due to temperature change.
- ▶ IP66/NEMA 4X Wall mounted transmitter – to work in demanding environments.
- ▶ IP66/NEMA 4X Front cover on panel mount version – no additional protection necessary.
- ▶ Back lit LCD display – easy to read in all environments.
- ▶ Choice of 0 to 10, 0 to 20 and 4 to 20mA isolated current O/P.
- ▶ Serial interface option available.
- ▶ Non-volatile memory – no battery back-up required.

What ABB products are suitable?

- ▶ **Model 4670/401 dip system:**
 - 1 metre dip

or
- ▶ **Model 4670/411 dip system:**
 - 2 metre dip
- ▶ **Plus choice of four dry standards:**
 - Model 7997/160, value typically 60 – 80 FTU
 - Model 7997/161, value typically 450 – 550 FTU
 - Model 7997/162, value typically 700 – 800 FTU
 - Model 7997/163, value typically 100 – 160 FTU

Other ABB monitoring capabilities suitable for use in other parts of the plant

- ▶ pH and Redox monitoring for treatment of cyanide and chrome.
- ▶ pH monitoring of mixer tank
- ▶ Flow monitoring
- ▶ Recorders

Installation

- ▶ Ensure there is sufficient cable to allow access to the sensor for maintenance/calibration.
- ▶ Where a flow system is used, ensure that flow is regulated on the outlet of the flow system to avoid air bubbles, or use a de-bubbler.

ABB has Sales & Customer Support
expertise in over 100 countries worldwide

www.abb.com

The Company's policy is one of continuous product
improvement and the right is reserved to modify the
information contained herein without notice.

Printed in UK (12.03)

© ABB 2003



ABB Limited

Oldends Lane, Stonehouse
Gloucestershire
GL10 3TA
UK
Tel: +44 (0)1453 826661
Fax: +44 (0)1453 827856

ABB Inc.

125 E. County Line Road
Warminster
PA 18974
USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183