*NEW*

STIRRED SLUDGE VOLUME INDEX APPARATUS

Are you obtaining useful sludge volume index (SVI) data?

SVI is an important design and operation parameter for secondary settling tanks in wastewater treatment processes. The procedure also allows determination of solids settling velocities that provide design and control information. Numerous studies over the past 20 years have identified and demonstrated flaws in the traditional method of assessing SVI. It has been roundly criticized for its utility.

The International Association on Water Quality (IAWQ) recently assembled a blue ribbon task force to examine all issues related to design and operation of secondary clarifiers resulting in the technical report by Ekama et al. (1997). A few other related references are listed below.

Many studies have examined procedures to overcome limitations of the traditional SVI method. The IAWQ committee recommended the stirred SVI at 3.5 g suspended solids/L (SSVI3.5) procedure as the measure of choice based on review of numerous studies and the experience of its members. They state:

**“However as a sludge settleability parameter (SSP) it [the SSVI3.5] is far superior to the standard SVI. At present the SSVI3.5 is the best SSP to use in conjunction with the flux procedure …”**

The SSVI3.5 is measured by settling wastewater in a cylinder with a diameter of at least 100 mm and height of at least 500 mm with gentle stirring at 1 rpm. The settling time is 30 min. Three or four mixed liquor (ML) samples are diluted and concentrated and the SSVI is measured for each concentration. Then the results are plotted to interpolate the SSVI value at a suspended solids concentration of 3.5 g/L.

The device to implement the **state-of-the-art** procedure is pictured below. The acrylic cylinder has an i.d. of 102 mm and height of 500 mm to meet specifications in Ekama et al. (1997). The stir rod and its support are easily assembled and dissembled for cleaning. The stir rod is driven at 1 rpm. Mixed liquor may be added directly to the cylinder followed by setup of the stirring rod and its support assembly. Or the rod with its support assembly may be setup and the mixed liquor added to the cylinder with a funnel (not included) placed in the 40 mm opening in the support plate. The clear cylinder is calibrated for ease of determination of final sludge volume and interface settling velocities.

**The device is available (see order form) from:**

CanadaWTX Inc.

117 Hudson Drive,

Toronto, M4T2K4

Canada

e-mail: info@canadawtx.com

References

Ekama, G.A. and G.v.R. Marais (1984), “Two Improved Sludge Settleability Parameters,” IMIESA, 9, 6, pp. 2027.

Ekama, G.A. and G.v.R. Marais (1986), “Sludge Settleability and Secondary Settling Tank Design Procedures,” *Water Pollution Control*, 85, 1, pp. 101113.

Ekama, G.A., J.L. Barnard, F.W. Günthert, P. Krebs, J.A. McCorquodale, D.S. Parker, and E.J. Wahlberg (1997), *Secondary Settling Tanks: Theory, Modelling, Design and Operation*, Scientific and Tech. Report No. 6, IAWQ, London.

Rachwal, A.J., D.W.M. Johnstone, M.J. Hanbury, and D.J. Critchard (1982), “The Application of Settleability Tests for Control of Activated Sludge Plants,” in *Bulking of Activated Sludge-Preventative and Remedial Methods*, B. Chambers and E.J. Tomlinson, eds., Ellis Horwood, Chichester, UK, pp. 224242.

White, M.J.D. (1975), *Settling of Activated Sludge*, Technical Report TR11, Water Research Centre, Stevenage, UK.

White, M.J.D. (1976), “Design and Control of Secondary Settling Tanks,” *Water Pollution Control*, 75, 4, pp. 459467.

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|  | Item | | | | | Quantity | Price Each | | Total Price | |
| 1 | SSVI unit (includes items 25 below) | | | | |  | $800Cdn | |  | |
| 2 | Cylinder | | | | |  |  | |  | |
| 3 | Stirring rod | | | | |  |  | |  | |
| 4 | Motor assembly | | | | |  |  | |  | |
| 5 | Transformer | | | | |  |  | |  | |
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| a For orders including 59 quantities of item 1, subtract 5% of the merchandise total.  For orders including quantities of 10 or more of item 1, subtract 10% of the merchandise total.  b Shipping rates are for surface delivery. Per unit weight is approx. 10lbs and dimensions 30”x10”x10” | | | | | | | | | | |