

S.P. THERMAL SYSTEMS INC.

4504 Green Meadow Blvd. Beamsville Ont. L0R 1B5

PH. 905 563 8651 FAX 905 563 6234

COOLING SYSTEM CONTROL VALUES

MAINTAIN DAILY TEST RECORDS

TOWER WATER: Use Chemical Pump with timer or contact water meter for good chemical feed control. Use Automatic bleed controller or timer with a solenoid to control the bleed when possible.

- Maintain TDS at **900 - 1000** mmhos by controlling tower bleed.
- Record TDS values daily. < 900 mmhos reduce bleed. Higher than 1000 mmhos increase bleed
- Maintain treatment level at **12 -15 drops** as phosphonate from test - **Test Kit (WT 8064)**
- Record water meter readings daily
- Check pH and record
- Check tower for bacteria. If signs of algae, increase biocide feed and consult with your Water Treatment Consultant.
- Use Micro Check test strips periodically to check bacteria levels.

SCALE AND CORROSION INHIBITOR PRODUCTS (WC 8325) (WC 8326) (WC 8327)

- ◆ Add to system as recommended using pump and timer
- ◆ **Less than 12 drops** increase pump time. **Higher than 15 drops** reduce pump time.
- ◆ Check batch tank daily and refill when required.
- ◆ Add Product **WC** ----- to batch tank. **Quantity** ----- **litres** and fill tank with water

BIOCIDE Products - (WC 8302) (WC 8304)

- Add biocide at the correct feed rate
- **ADD PRODUCT (WC 8302) Monday By Pump Time ----- Mins**
- **ADD PRODUCT (WC 8304) Thursday By Pump Time ----- Mins.**
- You can also add product to a Pot Feeder, twice / week. **Quantity ----- Litres**

NOTE: If signs of Algae / bacteria are present increase biocide feed or frequency.

NOTE: Use a 7 day timer / pump if possible to automatic feed biocide as required.

CLOSED LOOP - HOT OR CHILLED SYSTEMS

Two Treatments available - Sodium Nitrite Base - Molybdate Base

- ▶ Record daily Water meter readings if a meter is available.
- ▶ If make up is high try to find leak and fix.
- ▶ If the problem is not a leak and chemical values cannot be maintained, consult with your Water Treatment Consultant about the problem.
- ▶ Maintain treatment level as recommended below.
- ▶ **Molybdate Treatment program 100 - 150 ppm as Mo Test Kit (WT 8081) .**
- ▶ **Sodium Nitrite Treatment Program 1000 - 1500 ppm (20 - 30 drops) Test Kit (WT 8065)**
- ▶ Change by pass filters regularly. Check at least once / month.

CHEMICAL REQUIRED / 1000 US gallons Closed System loss Product WC ----- ---- LITRES

To Order Chemicals Call Ph (1) 905 563 8651 or Fax (1) 905 563 6234 Cell 416 876 0684



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COOLING TOWER TREATMENT TEST INSTRUCTIONS WT 8064

ORGANO PHOSPHONATE DROP TEST

Quantity	Contents	Code
30ml. pdb	Sodium Thiosulfate	WR 8261
25g.	Xylenol Orange Reagent Powder	WR 8262
30 ml. pdb	Acid - Fluoride Suppressor	WR 8296
30 ml. pdb	Thorium Nitrate Solution	WR 8263
1	Test Tube, 8.3 ml., plastic	0711
1	Dipper, 0.1 g. Plastic	0699

Procedure

- 1) Fill test tube to 8.3 ml. line with sample water.
- 2) Add 1 drop Sodium Thiosulfate, 0.1N (WR 8261). Mix by swirling.
- 3) Add 1 dipper Xylenol Orange Reagent Powder (WR 8262). Mix. Sample will be pink to purple colored.
- 4) Add 10 drops Acid-Fluoride Suppressor (WR 8296). Mix. Sample should be yellow colored. If not, add Acid-Fluoride Suppressor until sample is yellow colored.
- 5) While swirling the tube and holding the dropper bottle in an upright position, add Thorium Nitrate Solution, one drop at a time, while counting the number of drops. Continue adding Thorium Nitrate until the yellow color turns pink and no further color change occurs when 1 drop in excess is added.

TREATMENT CONTROL LEVELS

Treatment levels to maintain after Titrating in Step 5 is to achieve 12 - 15 drops when colour changes to pink

Less than 12 drops increase Feed rate of Treatment

More than 15 drops reduce Feed rate of Treatment.

NOTE: If conductivity in Cooling Water is higher than 1000 mmhos, Bleed Cooling Tower down to less than 1000 mmhos and re- test.

When this is done if values of Organo Phosphonate is > 15 drops reduce treatment

If Organo Phosphonate is < 12 drops then increase treatment

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SODIUM NITRITE DROP TEST

EQUIPMENT REQUIRED

Ferrion Indicator	WR 8264
CAN Solution	WR 8265
Sample tube	

SAMPLE POINTS

Closed loop system where Sodium nitrite is being used as a corrosion inhibitor

UNITS: ppm

CLOSED LOOP WATER

Take sample from Closed Loop and fill tube to 5 ml mark

Add 8 drops of Ferrioin Indicator WR 8264 and mix

Add while swirling WR 8265 reagent counting drops until sample turns to BLUE

RECORD : the number of drops it took to turn color to BLUE

CONTROL RANGE: 20 - 30 drops (1000 - 1500 ppm)

Each drop = 50 ppm

Less than 20 drops add more Sodium Nitrite to loop

Above 30 drops don't add anymore Sodium Nitrite

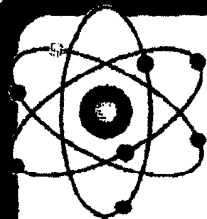
MONITORING

Monitor system regularly at least once / week and record

NOTE: If usage of Sodium Nitrite is high.

Check for leaks in system

Check for bacteria in system



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BOILER AND CLOSED LOOP TEST INSTRUCTIONS

WT 8081

MOLYBDATE COMPARATOR TEST KIT

QUANTITY	CONTENTS	CODE
30 ml pdb	Molybdenum Reagent 1	WR 8280
30 ml pdb	Molybdenum Reagent 3	WR 8295
1	Test Tube, 5 & 10 ml	
	Plastic with cap	
1	Octa-Slide Viewer	
1	Octa-Slide, Molybdate HR, 30-300 ppm	

PROCEDURE

- 1) Fill the test tube to the 5 ml line with sample water.
- 2) Add 1 drop Molybdenum Reagent 1 to the tube, cap and mix.
- 3) Add 5 drops Molybdenum Reagent 3 to the tube, cap and mix.
- 4) After 30 seconds insert the test tube in the Octa-Slide Viewer. Slide the Molybdenum HR Octa-Slide into the side of the viewer.
- 5) Match the sample color to a color standard. Record as ppm Molybdate (MoO_4).

***Boiler Systems using products WB 8212, WB 8213, WB 8214,
WB 8215, WB 8216, WB 8217, WB 8218, WB 8219***

Note: Molybdate Treatments for Boilers are specially blended to work on boiler systems only

***Maintain on Slide between 100 - 150 ppm
Less than 100 ppm increase chemical
More than 150 ppm reduce chemical***

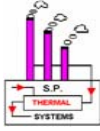
Closed Loop Systems using Molybdates maintain on slide between 100 - 150 ppm

***Note: Do not use Boiler Molybdate Products in Closed Systems.
Use only Molybdate products designed for closed loops such as***

WM 8675, WM 8678, WM 8679, WM 8681, WM 8685, WM 8686

***Maintain on Slide between 100 - 150 ppm
Less than 100 ppm increase chemical
More than 150 ppm reduce chemical***

S.P. THERMAL SYSTEMS
COOLING SYSTEM CONTROL

 S.P. THERMAL SYSTEMS INC. 4504 GREEN MEADOW BLVD. BEAMSVILLE ONT. L0R 1B5 PH 905 563 8651 FAX 905 563 6234					TOWER DAYS		<input style="width: 40px; height: 20px;" type="text"/> TONS <input style="width: 40px; height: 20px;" type="text"/> IN MONTH		YEAR MONTH		<input style="width: 40px; height: 20px;" type="text"/> ATTENTION <input style="width: 40px; height: 20px;" type="text"/> CUSTOMER		COOLING SYSTEM	
					MAKE UP TDS		<input style="width: 40px; height: 20px;" type="text"/>		MMHOS					
DATE	TOWER TDS MMHOS	TOWER TREATMENT LEVEL	TOWER PH	BACTERIA LEVEL Good /Poor	TOWER WATER READ US GALL	TOWER WATER READ IMP GALL	CLOSED LOOP LEVEL NITRITE	CLOSED LOOP LEVEL MOLYBATE	CLOSED LOOP WATER read. Us gall	TOWER S/CORR. TIMER SET	BIOCIDE TIMER SETTINGS	CLOSED LOOP TIMER SET		
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Control Values	900 - 1000 mmhos	12 - 15 drops Phosphonate	8 - 8.6	Good / Poor			1000 - 1500ppm as Sodium Nitr.	100 - 150 ppm as MO						