

# Sentinel SolarCheck Test Kit

## For Installation Validation Checks and Ongoing Monitoring

### Introduction

The Sentinel **SolarCheck Test Kit** is designed for use during both installation and maintenance of a flat plate collector or an evacuated tube solar heating system using glycol-based heat transfer (thermal) fluid. At installation the test kit allows the orientation of the solar panels to be checked for maximum solar energy collection and also confirmation of the correct level of antifreeze present in the thermal fluid. During subsequent routine service visits it is important to continue to monitor the condition of the thermal fluid for degradation. Progressive degradation will occur after several years in the system and the fluid will eventually need replacing. The SolarCheck test kit allows you to determine exactly when fluid replacement is required. The kit also allows the performance of the system to be measured. A SolarCheck Survey Sheet is available on the Sentinel web site allowing you to record relevant information during periodic routine maintenance. A copy of the completed report form can then be left with the householder.

### Specification

The SolarCheck Test Kit is supplied in a compact, durable plastic case and contains the following items:

- Compass
- Radiator Key
- Pack of pH papers (Range 6.0 – 10.0)
- Mini Infra Red (IR) Thermometer
- Refractometer
- Sample bottle
- Plastic dropper

The test kit is also supplied with a CD that contains full user instructions.

### Method of Use

**At system installation**, the refractometer is used to confirm that the system contains the correct level of antifreeze and orientation of the solar panels is checked using the supplied compass to ensure maximum solar energy collection.



**During periodic routine maintenance**, the performance of the system is measured by taking temperatures at the top and bottom of the solar plate collector together with the inlet and outlet of the hot water storage tank, using the Mini Infra Red Thermometer.

A sample of thermal fluid is taken and the appearance noted, the pH measured using the supplied pH papers and the level of antifreeze in the thermal fluid measured using the refractometer.

After a number of years the thermal fluid is likely to need replacing and by comparing the results from the assessment of the sample with the guideline figures provided in the kit instructions and on the SolarCheck Survey Sheet a reliable decision can be made as to whether thermal fluid needs to be replaced.

### System Treatment

If the thermal fluid is in need of replacement then Sentinel recommend **Sentinel R100 Solar Thermal Fluid**, which will provide satisfactory levels of antifreeze, excellent corrosion inhibition, resistance to degradation and an extended lifespan in the system.

The service tests may indicate that the system needs to be cleaned before the addition of the Sentinel R100. If so then **Sentinel R200 Solar Cleaner** is the product of choice. Sentinel R200 has been specifically designed to remove the sticky deposits found in systems after degradation of the antifreeze.