

# Sentinel R800

## Flushing fluid for heat pump ground loop circuits

### Description and Use

Sentinel R800 contains special dispersants designed to remove deposits and sludge.

When circulated through the ground source heat pump ground loop at ambient temperature for a period of approximately 20 - 30 minutes with a flushing unit, Sentinel R800 will effectively remove any sludge, deposits or blockages caused by degraded thermal fluid.

For systems with extensive deposits it may be necessary to extend circulation time or to elevate the cleaning temperature to achieve an effective clean.

### Features and Benefits

- Ready to use - no need for dilution
- Removes degraded thermal fluid
- Cleans within 20-30 minutes circulation
- Effective at low temperature
- Can be used with flushing machine
- None foaming and easy disposal
- Compatible with the construction materials of the ground source heat pump system

### Properties

Sentinel R800 is a mildly alkaline solution containing special dispersants and designed for use as a cleaner in ground source heat pump horizontal (e.g. slinky) or vertical (probe-type) ground loops.

Glycol-based thermal fluids commonly used in such circuits can degrade over time because of the stresses of cycling temperatures, and often accompanied by bacterial attack.

This degradation process, usually indicated by darkening of the fluid not only reduces its service life, but also has the following adverse effects on the operation of the system:

- Increase of fluid viscosity making it harder to pump
- Reduced heat transfer capability make the system much less energy-efficient
- Formation of solid deposits which reduce the diameters of pipe work and eventually cause blockages
- Freezing point increases and a gradual loss of frost protection
- Increasing fluid acidity which leads to accelerated degradation in a viscous circle.

- In order to restore the efficient operation of the ground source heat pump system it is necessary to remove the degraded thermal fluid, clean the ground loop circuit to remove any sludge, deposits, blockages and bacterial fouling, and then refill the circuit with Sentinel R500 - a thermal fluid which is especially formulated to resist degradation and so extend fluid life.

### Chemical Composition

- Appearance Clear, colourless liquid
- Density (20 °C) 1,02g/cm<sup>3</sup> (approx)
- pH 12.9

### Materials Compatibility

Sentinel R800 does not attack the sealant materials normally used in ground source heat pump ground loop circuits.

### Packaging

Sentinel R800 is supplied in 20 litre non-returnable plastic drums.

### Safety Precautions

The information provided overleaf enables compliance with the Control of Substances Hazardous to Health Regulations. A Safety Data Sheet is available upon request.



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Flushing Fluid for Heat Pump ground loop circuits	An alkaline aqueous solution of organic and inorganic compounds
Health Hazards	No significant hazards
Handling	Avoid contact with skin and eyes. Keep out of reach of children and animals. Wash out empty container thoroughly with water before disposal.
Storage	Keep container tightly closed. Store in cool, well ventilated area.
Spillage	Absorb on to inert material and dispose of according to Special Waste Regulations.
Fire/Explosion Risks	Non-flammable
First Aid	<b>Skin Exposure :</b> Wash immediately with plenty of water. Immediately remove all contaminated clothing. Seek medical attention.  <b>Eye Exposure :</b> Flush immediately with plenty of running water. Seek medical attention.  <b>Ingestion :</b> Rinse mouth with water. Do NOT induce vomiting! Seek medical advice.