

# HOUGHTON CHEMICAL CORPORATION

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## Product Data Sheet SECURITY<sup>®</sup> System Cleaner

SECURITY<sup>®</sup> System Cleaner is a powerful cleansing agent and can be used in tough conditions. It is an extremely effective iron oxide deposit cleaner formulated with the latest organic acid technology. SECURITY<sup>®</sup> System Cleaner works extremely well on calcium carbonate, sulfates, phosphates and organic based deposits.

The product works by penetrating, dispersing and complexing the by-products of iron oxide corrosion. During the cleaning process, SECURITY<sup>®</sup> System Cleaner leaves a protective barrier on ferrous and non ferrous system metals that provides temporary corrosion protection between flushing spent cleaner from the system and charging with Hydronic Fluid.

Applications include mixed metallurgy systems, hot water or steam boilers, closed chilled loop systems, and applications with accumulated by-products of iron oxide corrosion.

Contact Houghton Chemical Corporation for a Safety Data Sheet (SDS) containing product health & safety information.

### Typical Properties SECURITY<sup>®</sup> System Cleaner

Property	Value
Active Ingredients	15-60%
Other Ingredients	40-85%
Appearance	Liquid, Clear, Amber
Specific Gravity (15/15°C 60/60°F)	1.14
pH	< 7

#### General Data:

- Requires a minimum of 8 hours recirculation
- Cleaner action usually complete within 48 hours
- Lightly fouled systems generally require about 1% volume/volume dosage
- Moderately fouled systems generally require between 5% and 10% volume/volume dosage
- Elevated temperatures (between 130°F and 195°F) enhance cleaning action
- SECURITY<sup>®</sup> System Cleaner provides temporary passivation to protect the Heat Transfer System between cleaner flush & drain and Hydronic Fluid charge

#### Cautionary Information:

SECURITY<sup>®</sup> System Cleaner is not aggressive to ferrous and non-ferrous metals. However, be aware that when using SECURITY<sup>®</sup> System Cleaner to remove accumulated by-products of iron oxide corrosion, there is a potential to uncover under deposit corrosion cells that were created prior to the application of SECURITY<sup>®</sup> System Cleaner. Therefore, it is possible for the cleansing action of SECURITY<sup>®</sup> System Cleaner uncover pin-hole leaks in fouled piping systems.

Typical properties, not to be construed as specifications. As use conditions are not within its control, Houghton does not guarantee results from use of the information or products herein; and gives no warranty, express or implied.

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## Application Rates and Use Instructions for SECURITY<sup>®</sup> System Cleaner

The following is the procedure for using SECURITY<sup>®</sup> System Cleaner to clean rust, scale, and other deposits from closed loop water systems. Prior to initiating the cleaning procedure, drain & flush the Heat Transfer System to remove as much loose and/or suspended matter as possible. In an operating system, this can be accomplished by blowdown and careful addition of make-up water to replace fluid lost during blowdown. Where possible, heat the circulating fluid to between 130°F and 195°F. Heating speeds the reaction and can reduce the time or concentration required for the product to clean the system.

### DOSAGE

The required dosage of SECURITY<sup>®</sup> System Cleaner will vary from system to system, depending on factors such as system size and degree of distress of the Heat Transfer System.

- A) For lightly fouled systems, a 1% volume/volume dosage (10 gallons of SECURITY<sup>®</sup> System Cleaner per 1000 gallons Heat Transfer System capacity) is usually sufficient.
- B) For moderately fouled systems, a 5% - 10% volume/volume dosage should be sufficient.
- C) For heavily fouled systems, please contact your Houghton Chemical Corporation Account Manager for specific guidance.

### DISPOSAL

- A) Consult your local municipality or commercial waste removal company regarding the disposal of spent cleaning solution.

### PROCEDURE

1. Drain the Heat Transfer System to storage or waste, as applicable. Then, flush the Heat Transfer System to waste.
2. Refill the Heat Transfer System with good-quality water. If system heating is available, set the temperature to between 130°F and 195°F. Add SECURITY<sup>®</sup> System Cleaner at the dosage determined using the criteria above.
3. Recirculate the Cleaning Solution through the Heat Transfer System. If system heat is available, the recommended process time is 8 – 24 hours. Without system heat, the recommended process time is 24 – 48 hours. For Heat Transfer Systems with heavier rust / scale deposits, a longer recirculation time may be required to penetrate and disperse the fouling deposits. SECURITY<sup>®</sup> System Cleaner will temporarily passivate the Heat Transfer System, protecting against oxidization after the Cleaning Solution is flushed and drained from the Heat Transfer System.
4. Monitor the cleansing action by checking the pH of the solution. A pH of between 6.0 and 7.0 is the optimum level during recirculation. If the pH rises above 7.5 during recirculation, add more SECURITY<sup>®</sup> System Cleaner to the Heat Transfer System. Be Careful – if the system was heated during cleaning, the fluid will be HOT.
5. Once the SECURITY<sup>®</sup> System Cleaner product has removed the fouling from the pipe, allow the Cleaning Solution to cool (if necessary), drain and flush the Heat Transfer System to waste. Continue flushing the Heat Transfer System until the discharge water remains clear.
6. When the Heat Transfer System has been thoroughly flushed and emptied, charge the Heat Transfer System without delay using a Houghton Chemical Corporation Hydronic Fluid. The passivation of the Heat Transfer System imparted by SECURITY<sup>®</sup> System Cleaner is temporary; the corrosion inhibitors in the Hydronic Fluid will provide long-term corrosion protection to the Heat Transfer System.

### NOTES

It may not be possible to remove all of the iron oxide deposits from a fouled system. Most corrosion inhibitors used in closed systems will continue to remove iron deposits during use. Therefore, the Hydronic Fluid is likely to change from a clear fluid to a turbid, or cloudy, fluid – and in severe cases, the appearance of the Hydronic Fluid may change to a muddish-red. Side-stream filtration (25-micron) will help alleviate this condition.

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