



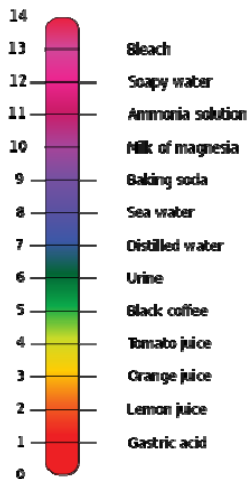
***TECHNICAL BULLETIN***  
***Super Agent Corrosion Test***

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Recently, it was observed that Super Agent when spilled on plated steel parts, showed a tendency for oxidisation to occur rapidly. See Photo 1



**PHOTO 1**



ETI was asked to evaluate the corrosive properties of Super Agent. The MSDS and chemical properties indicate that Super Agent is neutral to marginally alkaline at PH 6.6 – 8.5, pure water being considered neutral at 7.0. To get it into some perspective, the following chart gives some typical PH ratings of common substances. 0 to 6.5 is the Acidic range and 8.0 to 14.0 is the alkaline range.

ETI did some short term exposure tests to evaluate if there was any concern as to adverse corrosive properties of Super Agent. This was done by placing a number of specimens of mild steel, brass and stainless steel in an immersion test with Super Agent and also normal water as the control sample. A number of bolt and nut specimens both in black steel and plated type were also mounted on a board and sprayed with Super Agent to evaluate the corrosive effect.



The results were as follows

- 1) The control sample of mild steel in water exhibited normal reaction with corrosion commencing within 24 hours and accelerating over three days.



The control sample showed mild steel corroding normally in clean water over three days. Note water discoloration.

PHOTO 2

- 2) The same mild steel sample immersed in pure Super Agent



The sample resisted corroding in 100% Super Agent. The exposed shiny surfaces were unaffected! Note agent not discolored.

PHOTO 3

- 3) Black Bolt sprayed with 100% Super Agent and observed over three days.



PHOTO 4

The black bolt showed no adverse corrosion reaction.



- 4) Plated Bolt Sprayed with 100% Super Agent and observed over three days.



The plated bolt showed adverse oxidization similar to that reported by the customer.

- 5) OTHER TESTS – Immersion tests were also carried out using 100% Super Agent with Stainless Steel and Brass. No adverse reactions were observed.

#### CONCLUSION

Super Agent has similar non corrosive properties to 6% Agent when exposed to steel, brass and stainless Steel. Nevertheless it causes adverse reaction to plating on some steel parts. There is no cause for concern in the basic ETI fire suppression system where the agent container is stainless steel and the spray nozzles are brass. Obviously caution has to be observed against spills as it is a concentrated chemical and the normal cautions for handling any chemical should be observed. Exposure to plated parts suggests prompt clean up and possibly application of an anti-corrosive material. Hoses used in ETI fire systems tend to use plated fittings. Therefore if an ETI system discharges super Agent, It is recommended that a flushing of the pipework with clean water take place and the machine environment also receive a suitable wash down.

Yours sincerely

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Technical Director