



  
**STELLAR  
SOLUTIONS**  
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## **Environmental Information for CitriSurf**

77, 77 Plus, 2050, 2210, 2250, 2310, 2325, 2450, 2550, 3050, 3250

### **General:**

*The CitriSurf line of products has specifically been formulated to eliminate the safety and environmental problems of nitric acid and other mineral acids used in the cleaning and passivation of stainless steel. When used as directed, CitriSurf products yield excellent results without producing hazardous waste or NO<sub>x</sub> pollution in the air.*

### **Waste water:**

*CitriSurf products are a high quality blend of chemicals formulated for the cleaning and passivation of stainless steel products normally without producing hazardous rinse solutions which require waste treatment prior to drain. Because the CitriSurf products do not strip the nickel or chromium from the surface, the rinse water can normally be put directly to drain as long as the pH falls within local guidelines (normally 5.0-9.0, but local areas vary!). CitriSurf products are excellent at selectively removing the iron and iron oxides from the surface, yielding rinse water that can easily be drained.*

*When the master bath requires replacement, which is seldom, the bath can be treated easily to remove all possible contaminants that may be in the bath, so that the requirements of local, state and Federal regulations are all met. Consult our technical experts if you have any questions in this area.*

### **Air cleanliness:**

*There are no NO<sub>x</sub> fumes emitted from the CitriSurf products. It is not necessary to scrub the air over the CitriSurf bath as required with nitric acid. When used as directed, the CitriSurf products do not produce fumes which are hazardous to individuals or to the environment as with nitric acid.*

While the company believes that the information contained herein is factual and the opinions expressed are based on tests and data believed to be reliable, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by this company as to the effects of such use, the results to be obtained, or the safety and toxicity of the product, nor does this company assume any liability arising out of the use, by others, of the products referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or governmental regulations.

## ENVIRONMENTAL SAFETY OF PASSIVATION PROCESSES

As presented to the SAE-G3 Meeting by GE  
March 6, 2002

SPECIFICATION ISSUES	MIL-H-25579 Paragraph 3.8.2	SAE AS1946 Paragraph 3.3.3.3.2 Per AMS QQ-P-35 Paragraph 3.3.2	SAE AS1946 Paragraph 3.3.3.3.2 Per AMS QQ-P-35 Paragraph 3.3.6	SAE AS1946 Paragraph 3.3.3.3.2 Per ASTM A-967 Section 7
	1	2	3	4
<b>Chemicals and Methods</b>	Nitric Acid: 15-25% Sodium Dichromate: 2% Temperature: 120-130 F Processing Time: 15-30 Min	Nitric Acid: 20-25% Sodium Dichromate: 2.5% Temperature: 120-130 F Processing Time: 20 Min	Nitric Acid: 25-45% Temperature: 70-90 F Processing Time: 30 Min	Citric Acid (Proprietary Solution)
<b>Passivation Performance On Austenitic Stainless Steels</b>	Passes All Requirements	Passes All Requirements	Passes All Requirements	Passes All Requirements
<b>EHS Issues</b>	<b>high = 3; medium = 2; low = 1; none = 0</b>			
General Environment	3	3	2	1
Surrounding Equipment Degradation	2.5	2.5	2	0
Traffic Management	3	3	3	1
Training	3	3	3	1
Handling & Storage	3	3	3	1
Ergonomic - Personnel - Environmental	3	3	3	1
Hazardous Waste Disposal	3	3	3	1
Monitoring & Reporting	3	3	3	0
<b>Facilities</b>				
Scrubber Maintenance	3	3	2	0
Production Downtime	2	2	1	1
Equipment Replacement (Corrosion)	2	2	1	1
Make-Up Air	3	3	2	1
Electrical Costs	3	3	2	1
<b>SUMMARY ISSUES RATING</b>	<b>23.5</b>	<b>23.5</b>	<b>22</b>	<b>6</b>