

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1996
 DateRun: 09/19/1996
 Experimenters: Jay Jankauskas
 ClientType: Biomedical Device Manufacturer
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Part
 Contaminants:
 Cleaning Methods:
 Analytical Methods: OSEE
 Purpose: OSEE results on alcohol cleaned parts
 Experimental Procedure:

Results: I just finished evaluating the alcohol cleaned parts that you sent to me. The results as shown on the following page vary somewhat from part to part:

11 Fr. Spring- The alcohol did remove a good amount of the contamination, but it still does not look as good as the vapor degreased part. Data points were consistent with a low standard deviation.

J Pins- Looked like the alcohol soak cleaned better than the vapor degreaser. Data scatter was very high (notice the two readings in the low 100's).

Impeller Shaft- The shafts cleaned with alcohol after passivation came out with lower readings than parts that were only passivated (similar trend to the parts just alcohol soaked). As I mentioned before I would like to perform some FTIR readings on these parts. The software we need should be in next week (sorry about the delay).

Short Pins- Too small to obtain readings on the OSEE. I will use the FTIR to evaluate these when we get the necessary software.

| OSEE Results For C.R. Bard Inc. | | | | | | | | | | |
|---------------------------------|--------------------|---------------|-----------|--------------|-----------------|----------|-----------|----------------|-----------|----------|
| Part # | 1.01E+08 | | | | 230056-0000 | | | 895-0019 | | |
| Lot # | 13020707 | | | | 13021720 | | | 3019101 | | |
| Desc. | 1/8 Precision Ball | | | | Impeller Plates | | | 11 Fr. Stylet | | |
| Status | Dirty | Vap Degr | IPA Soak | Dirty | Vap Degr | Alc. s&w | Alc. soak | Dirty | Vap Degr | |
| | 77 | 95 | 90 | 272 | 343 | 970 | 446 | 198 | 197 | |
| | 63 | 111 | 87 | 327 | 485 | 755 | 416 | 208 | 213 | |
| | 84 | 112 | 104 | 385 | 511 | 904 | 563 | 169 | 210 | |
| | 70 | 113 | 102 | 270 | 397 | 678 | 506 | 215 | 202 | |
| | 98 | 120 | 101 | 214 | 402 | 512 | 590 | 152 | 194 | |
| | 51 | 101 | 85 | 248 | 553 | 734 | 609 | 141 | 202 | |
| | 69 | 117 | 96 | 281 | 468 | 850 | 848 | 137 | 198 | |
| | 79 | 103 | 93 | 267 | 375 | 494 | 516 | 124 | 205 | |
| | | 107 | 91 | 263 | 668 | 967 | | 153 | 191 | |
| | | 106 | | 242 | 387 | 969 | | 136 | 208 | |
| Average | 73.88 | 109.00 | 94.75 | 276.90 | 458.90 | 783.30 | 561.75 | 163.30 | 202.00 | |
| Std | 14.15 | 8.54 | 7.17 | 47.82 | 99.31 | 180.65 | 133.53 | 32.69 | 7.12 | |
| | | | | | | | | | | |
| Part # | | 868-0001 | | 868-0002 | | | | 23006000 | | |
| Lot # | | 4161103 | | | | | | 5318102 | | |
| Desc. | | 11 Fr. Spring | | 9 Fr. Spring | | | | Impeller Shaft | | |
| Status | Dirty | Vap Degr | Alc. Soak | Dirty | Dirty | Vap Degr | Pass | Pas & Alc | Alc. soak | Alc. s&w |
| | 125 | 138 | 136 | 256 | 158 | 194 | 138 | 158 | 83 | 105 |
| | 118 | 155 | 146 | 288 | 151 | 198 | 173 | 157 | 121 | 88 |
| | 114 | 157 | 157 | 302 | 87 | 182 | 140 | 167 | 115 | 75 |

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|---------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| | 121 | 198 | 156 | 258 | 144 | 184 | 153 | 124 | 114 | 74 |
| | 111 | 165 | 142 | 234 | 133 | 203 | 138 | 124 | 108 | 83 |
| | 117 | 157 | 149 | 218 | 158 | 203 | 217 | 120 | 121 | 103 |
| | 109 | 255 | 139 | 181 | 109 | 190 | 154 | 140 | 118 | 87 |
| | 130 | 204 | 133 | 227 | 164 | 182 | 188 | 141 | 118 | 88 |
| | 124 | 186 | 147 | 206 | 178 | 196 | 167 | 123 | | |
| | 130 | 156 | 152 | 223 | 127 | 181 | | | | |
| Average | 119.90 | 177.10 | 145.7 | 239.30 | 140.90 | 191.30 | 163.11 | 139.33 | 112.25 | 87.88 |
| Std | 7.40 | 34.52 | 8.17 | 37.03 | 27.46 | 8.71 | 26.50 | 17.82 | 12.56 | 11.37 |

Summary:

Conclusion: