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| MFTTraveler Title | EIC197 Crab Cavity Components Preparation  |
| Traveler Abstract | This document captures the degreasing and BCP etching of cavity components.  |
| Traveler ID | EIC197-CHEM-COMP-DEGR |
| Traveler Revision  | R1 |
| Traveler Author | Michelle Oast |
| Traveler Date | 24-Mar-25 |
| NCR Informative Emails | Buttles,Weinmann,forehand,kdavis |
| NCR Dispositioners | Carriere,aobrien,fiedler |
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| Approval Names | M. Oast | R. Fiedler | P. Carriere | J. Buttles |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | Reviewer | Project Manager |

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| References | List and Hyperlink all documents related to this traveler. This includes, but is not limited to: safety (THAs, SOPs, etc), drawings, procedures, and facility related documents. |
| [SRF-MSPR-CHEM-CAV-USC](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261722/SRF-MSPR-CHEM-CAV-USC-R1.pdf)Cavity Ultrasonic Cleaning | [SRF-MSPR-CHEM-FBH-DEGR](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261899/SRF-MSPR-CHEM-FBH-DEGR-R1.pdf)Flange Bolt Hole Cleaning | [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf)BCP Etch Rate measurement  |  |  |
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| Revision Note |  |
| R1 | Initial release of this Traveler. |

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| Step No. | Instructions | Data Input |
| 1 | Select component type and Serial Number: BLF: Beamline FlangeBSIN: Boss InBSOUT: Boss OutBSTOP: Boss StopDBFP: Dogbone Field ProbeDBSTIFF: Dogbone StiffenerDISH: End DishDISHNBS: FPC End Dish AssemblyEDRN: End Dish Restraint NutEG1: End Group 1EG2: End Group 2EG2BP: End Group 2 BeampipeEG2FPCWGE: FPC Waveguide EndFLGSLG: 3.375” Flange SlugFLGSLG6: 6” Flange SlugFPCBPA: FPC/End Group 2 Beampipe Assembly FPCDBH: FPC Dogbone HalfFPCDBT: FPC Dogbone TransitionFPCDBWG: FPC Dogbone WeldmentFPCP: FPC PortFPCPF: 6 CF BlankFPCPRTBRZ: FPC Port BrazementFPCPRTMCH: FPC Port MachiningFPCPTR: FPC Port Transition Rough MachiningFPCWA: FPC Waveguide AssemblyFPEGBP: End Group 1 Beampipe AssemblyFPEGBR: End Group 1 BeampipeFPPA: Field Probe Port AssemblyFPWA: Field Probe Waveguide AssemblyFULDSH: FP End Dish AssemblyFULPLT1: FP End Plate AssemblyFULPLT2: FPC End Plate AssemblyHHMWGIN: H HOM Waveguide InnerHHMWGOU: H HOM Waveguide OuterHWGFA: H HOM Waveguide AssemblyPLATE1: End Plate End Group 1PLATE2: End Plate End Group 2POLE: Pole FloorPUPF: Pickup Port FlangePUT: Pick Up TubePW: Pole WallTUNPK: Tuner PuckVHMWGIN: V HOM Waveguide InnerVHMWGOU: V HOM Waveguide OuterVWGFA: V HOM Waveguide | [[EIC197Component]] {{AMGV,FPFT,HMFT,BPM,BMPFT,BLBP,BLBS,BLBU,BLXD,FWM,FPW}} <<SELECT>>[[AMGVSN]] <<AMGVSN>>[[FPFTSN]] <<FPFTSN>>[[HMFTSN]] <<HMFTSN>>[[BPMSN]] <<BPMSN>>[[BPMFTSN]] <<BPMFTSN>>[[BLBPSN]] <<BLBPSN>>[[BLBSSN]] <<BLBSSN>>[[BLBUSN]] <<BLBUSN>>[[BLXDSN]] <<BLXDSN>>[[FWMSN]] <<FWMSN>>[[FPWSN]] <<FPWSN>>[[DropSN]] <<TEXT>>[[Combine component and matching SN into DropSN for the traveler select box]] <<NOTE>> |
| 2 | Inspect the component, particularly the flanges and select whether defects are found. Add comments and upload any necessary photos or files. If it does not pass inspection submit an NCR. | [[PreInspectionOK]] <<YESNO>>[[PreInspectedBy]] <<SRF>>[[TimeAndDatePreInspection]] <<TIMESTAMP>>[[PreInspectionComment]] <<COMMENT>>[[PreInspectionDocs]] <<FILEUPLOAD>> |
| 3 | Degreasing: Does the component require ultrasonic?Record Process, Operator, and Date/Time.Add comments and upload any necessary photos or files. | [[DegreasingUSC]] <<CHECKBOX>>[[DegreaseTech]] <<SRF>>[[TimeAndDateDegr]] <<TIMESTAMP>>[[DegreaseComment]] <<COMMENT>>[[DegreaseFile]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| 4 | Does the component need to be etched by BCP? Does component require specialized tooling? If so, refer to procedure:Enter Operator and Date/Time of completionSelect whether the old acid mixture was used or a new one was mixed for this process.Enter the date the acid mixture was prepared.Measure the etch rate of the BCP 1:1:1 solution to be used at **15-17 C**. If the etch rate is **< 3 microns /min** for BCP 1:1:1 the acid should not be used and a fresh solution should be mixed.Enter the temperature of the acid during etch rate test [it should be between 15-17 C (59-63 F)].Enter the average value of the etch rate from the measurement by weight loss.Enter the etch rate measured by thickness reduction.If the etch rate values determined by both methods differ by more than 20%, the measurement should be repeated.Click in the box to calculate the etching time to remove 25 microns.Etch each flange for the calculated duration as per "C75 flange BCP " procedure. Check the acid temperature before etching each flange to assure it is maintained below 20 C (68 F).Comment on any information relevant to the BCP etch.  | [[BCP]] <<CHECKBOX>>[[BCPTooling]] <<CHECKBOX>>[[OperatorBCP]] <<SRF>>[[TimeAndDateBCP]] <<TIMESTAMP>>[[BCPState]] {{Old,Fresh}} <<RADIO>>[[BCPAcidDate]] <<TIMESTAMP>>[[AcidTemperature]] <<FLOAT>> C[[Etch\_Rate\_Weight]] <<FLOAT>> microns/min[[Etch\_Rate\_Thickness]] <<FLOAT>> microns/min[[AvgEtchRate]] <<FLOAT>>[[AvgEtchRate: Please add code to calculate average etch rate = (EtchRateWeight + EtchRateThickness)/2. Please limit to 1st decimal value]] << NOTE>>[[Etch\_Rate\_Meas\_Tech]] <<SRFCVP>>[[EtchTime]] <<FLOAT>> min[[25/(AvgEtchRate). Please limit to 1st decimal value]] <<NOTE>>[[BCP\_Comment]] <<COMMENT>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| 5 | Select if Q-tip BCP was applied. Specify in the Comment box to which surfaces it was applied to. | [[QtipBCP]] <<CHECKBOX>>[[QtipBCP\_Comment]] <<COMMENT>>[[QtipBCPTech]] <<SRF>>[[TimeAndDate\_OtherAcid]] <<TIMESTAMP>> |
| 6 | Select if the component has been baked in the nitrogen oven at 100C overnight (10-12hours).  | [[Baked]] <<CHECKBOX>>[[BakeTech]] <<SRF>>[[BakeTimeAndDate]] <<TIMESTAMP>>[[BakeComment]] <<COMMENT>> |
| 7 | Do the flanges need polishing? Describe work performed in comments. | [[PolishingPerformed]] <<YESNO>>[[PolishTech]] <<SRF>>[[Polish\_TimeAndDate]] <<TIMESTAMP>>[[Polish\_Comment]] <<COMMENT>>[[Polish\_File]] <<FILEUPLOAD>> |
| 8 | Perform a final inspection of the flanges and critical areas of the item (probe tip, seal surfaces).Add comments and upload any necessary photos or files. If it does not pass inspection submit an NCR. | [[FinalInspectionOK]] <<YESNO>>[[FinalInspectionTech]] <<SRF>>[[FinalInspection\_TimeAndDate]] <<TIMESTAMP>>[[Final\_Inspection\_Comment]] <<COMMENT>>[[FinalInspection\_File]] <<FILEUPLOAD>> |
| 9 | Final Location of component | [[Cleanroom]] <<YESNO>> |