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| Traveler Title | 7 Cell Cavity Electropolish with Cavity Cooling System |
| Traveler Abstract | This document captures data from performing electropolishing, cavity cooling, water rinsing, cavity removal from the EP tooling, and ultrasonic cleaning. |
| Traveler ID | P1-CHEM-CAV-EP |
| Traveler Revision  | R1 |
| Traveler Author | Ashley Anderson |
| Traveler Date | 06-Aug-2020 |
| NCR Informative Emails | forehand,areilly |
| NCR Dispositioners | ashleya,kdavis,ganey |
| D3 Emails | ashleya,kdavis,ganey,forehand |
| Approval Names | 1. Anderson
 | K. Davis | A. Reilly |  |
| Approval Signatures |  |  |  |  |
| Approval Date |  |  |  |  |
| Approval Title | Author | 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. |
| [Degreasing Cavity](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-61592/CP-C100-CAV-DEGR%5B1%5D.pdf) | [Electropolishing](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-61593/CP-C100-CAV-EPOL.pdf) | [Data Collection Hardware](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-61594/CP-C100-EP-HDWR.pdf) |  |  |
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| Revision Note |  |
| R1 | Initial release of this Traveler.  |

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| **Step No.** | **Instructions** | **Data Input** |
| 1 | Record cavity label, operators, process date, and time.* If for any reason process of this cavity is stopped due to a question or problem select the Help Request toggle. This will trigger a red status on the traveler dashboard showing a work stoppage. When the problem is resolved deselect the toggle to continue process. Create D3 to document activities requiring Help Request.
 | [[CAVSN]] <<CAVSN>>[[Operator]] <<SRFCVP>>[[Technician]] <<SRFCVP>>[[DateAndTime]] <<TIMESTAMP>>[[HelpRequest]] <<YESNO>> |
| 2 | Process Run Identification: Cavity type, Target Removal | [[CavityType]] <<COMMENT>>[[TargetRemoval]] <<FLOAT>>micron |
| 3 | Record prior surface cleaning history of this cavity. | [[Degreased]] <<CHECKBOX>>[[BCP]] <<CHECKBOX>>[[EP]] <<CHECKBOX>>[[HPR]] <<CHECKBOX>>[[Notes]] <<COMMENT>> |
| 4 | Record cavity mounting details. | [[RecordMountingTime]] <<TIMESTAMP>>[[Technician1]] <<SRFCVP>>[[Technician2]] <<SRFCVP>>[[LeftEndGroupAlign]] <<FLOAT>>mm |
| 5 | Cathode Details. | [[CathodeUsed]] <<TEXT>>[[CathodeC4Equator]]<<FLOAT>>inches |
| 6 | Run checklist performed? (Plumbing connections, bolts tightened, no snag risks.)Electrical Resistivity checked?Thermocouple response checked?Record Chiller Temperature Set Point. (37.5F is default for 7 Cell) | [[Checklist]] <<CHECKBOX>>[[ElecResistivity]] <<CHECKBOX>>[[ThermoCheck]] <<CHECKBOX>>[[ChillerSetPoint]] <<FLOAT>> |
| 7 | Record electrolyte history. | [[Electrolyte]] <<FLOAT>>micronNb |

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| **Step No.** | **Instructions** | **Data Input** |
| 8 | Start process cycle.Verify Cavity rotation. | [[CycleStarted]] <<TIMESTAMP>>[[Rotation]] <<CHECKBOX>> |
| 9 | Record details of any leaks identified when cavity was full and rotating.Is acid at fill line on right end plate? | [[LeakDetails]] <<COMMENT>>[[CavityFull]] <<YESNO>> |
| 10 | Record acid sump temp, inlet, and exit temperatures (C). | [[Sump1]] <<FLOAT>>[[AcidInlet1]] <<FLOAT>>[[AcidOutlet1]] <<FLOAT>>[[RecordTime1]] <<TIMESTAMP>> |

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| **Step No.** | **Instructions** | **Data Input** |
| 11 | Verify Cavity Cooling System is on. | [[CoolingSystem]] <<CHECKBOX>>[[CoolingTemp]]<<FLOAT>>C |
| 12 | Record "Current On" time. Set and record process voltage and current. | [[CurrentOn]] <<TIMESTAMP>>[[ProcessVoltage]] <<FLOAT>>[[ProcessCurrent]] <<FLOAT>> |
| 13 | Record Cavity temperatures (C). | [[LeftEndGroup]] <<FLOAT>>[[C1]] <<FLOAT>>[[C3]] <<FLOAT>>[[C4]] <<FLOAT>>[[C5]] <<FLOAT>>[[C7]] <<FLOAT>>[[RightEndGroup]] <<FLOAT>> |
| 14 | Record acid sump temp, inlet, and exit temperatures (C). | [[Sump2]] <<FLOAT>>[[AcidInlet2]] <<FLOAT>>[[AcidOutlet2]] <<FLOAT>>[[RecordTime2]] <<TIMESTAMP>> |

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| **Step No.** | **Instructions** | **Data Input** |
| 15 | Record Cavity Temperatures at Final data reading (C). | [[LeftEnd\_Group]] <<FLOAT>>[[C\_1]] <<FLOAT>>[[C\_3]] <<FLOAT>>[[C\_4]] <<FLOAT>>[[C\_5]] <<FLOAT>>[[C\_7]] <<FLOAT>>[[RightEnd\_Group]] <<FLOAT>> |
| 16 | Record acid sump temp, inlet and exit temperatures prior to Final data reading (C). | [[Sump3]] <<FLOAT>>[[AcidInlet3]] <<FLOAT>>[[AcidOutlet3]] <<FLOAT>>[[RecordTime3]] <<TIMESTAMP>> |
| 17 | Record "Current Off" time and record total polish time.30 minute clean up run complete? | [[CurrentOff]] <<TIMESTAMP>>[[PolishTime]] <<FLOAT>>min[[CleanUpRun]] <<CHECKBOX>> |
| 18 | During program step 20 drain to tank, record time entered for draining. | [[DrainTime]] <<INTEGER>>sec |
| 19 | When program step 21 starts record time. | [[Step21Start]] <<TIMESTAMP>> |

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| **Step No.** | **Instructions** | **Data Input** |
| 20 | Record time process cycle completed; turn on air handler. | [[ProcessComplete]] <<TIMESTAMP>>[[AirHandlerOn]] <<CHECKBOX>> |
| 21 | Don PPE, open cabinet door, and remove EP carriage from the cabinet. | [[RemovalNotes]] <<COMMENT>> |
| 22 | Chemistry hardware removed, cavity thoroughly rinsed with Di-water hose and Di-water gun. | [[HardwareRemoved]] <<CHECKBOX>>[[CavityRinsed]] <<CHECKBOX>>[[TimeRinsed]] <<TIMESTAMP>> |
| 23 | Inspect flanges for staining or scratches. | [[FlangeNotes]] <<COMMENT>> |
| 24 | Transport cavity to Production Chemroom for UHV degreasing.Record Cavity UHV start time. | [[CavUHV\_StartTime]] <<TIMESTAMP>> |
| 25 | Upload process data text file and process screen shots document. | [[AttachDataFile]] <<FILEUPLOAD>> |
| 26 | Record identified repairs or improvements needed. Notify process equipment technician of any needed repairs or improvements. | [[RepairImprovementDetails]] <<COMMENT>> |