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| **SNS PPU Cavity Degreasing Procedure** |
| **Document Number:** | SNSPPU-PR-CHEM-CAV-DEGR | **Effective Date:** | 20-DEC-2021 |
| **Revision Number:** | R2 | **Periodic Review Date:** | 20-DEC-2023 |
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# Purpose

This procedure covers the process for degreasing an SNS cavity to enter the clean room for HPR, testing, and/or assembly. It will include instructions for the different stages of cavities that are received.

The stages of cavities include:

1. Un-tanked, under vacuum
2. Un-tanked, vented with no test blanks attached
3. Tanked, assembled

SAFETY:

Individual must keep safety as the first priority in the process; before beginning any job, the user must assure they have the correct PPE for the individual job. Maintaining the level of safety and secure nature of the work area is paramount. Assure personal safety by using caution in movement and taking necessary steps to avoid unnecessary personnel in the immediate area.

# Scope

This procedure applies to <enter text>.

This procedure does not apply to <enter text>.

# Terms and Definitions

The following terms have specific meanings within this procedure.

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| **Term** | **Definition** |
| **Cavity Roll Cart** | The size and weight of the SNS tanked cavities will only allow the cavities to be transported verticallyusing a four wheel cavity roll cart |
| **DI Water** | Ultra-pure water used in cleaning and degreasing. |
| **Car Wash Room** | Area in the water room that is typically used for pressure washing or rinsing using a DI Water hose. |
| **ISO-6 Area** | Areain the water room where there is laminar flow similar to what is used in the clean room |
| **HPR** | High pressure rinse |

# Roles and Responsibilities

The following roles have responsibilities described in this document.

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| **Role** | **Responsibility** |
| <Job Title> | <Very short summary of activities this job title performs in this procedure.> |
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# Procedure

Level 1 text.

## Un-tanked cavities under vacuum

1. The cavity should arrive in the chemistry area on a cavity roll cart in the vertical position with testing blanks attached.
	1. Remove any plastic dust covers.
2. Don appropriate PPE: A fresh pair of clean gloves and safety glasses. See room OSP and posted signs for guidance on hearing protection.
3. Using Acetone soaked wipers first, then isopropyl soaked wipers, remove any residual grease or tape that may be visible.
	1. Pay close attention to the area around the valve on the bottom beamline flange. This is where the vacuum connection will be made to attach the cavity to a test stand in order for VTA processing.
4. Wipe down the roll cart that the cavity is being transported on.
5. The cavity can then be rolled into the clean room pass through for further processing from the assembly group.

## Un-tanked cavities, vented with no testing blanks attached

1. The cavity should arrive in the chemistry area on a cavity roll cart in the vertical position with none of the testing blanks attached.
2. Don appropriate PPE: A fresh pair of clean gloves and safety glasses. See room OSP and posted signs for guidance on hearing protection.
3. Using Acetone soaked wipers first, then isopropyl soaked wipers, remove any residual grease or tape that may be visible.
4. The cavity should be rolled into the Production Chemistry Room for use in the large ultra-sonic tank.
5. Referencing the standard operating procedure for cavity degreasing, USC in Liquinox detergent.
	1. USC a minimum of 30 minutes if the water has been pre heated to proper temperature (122°F).
	2. If the water has not been pre-heated, USC for a minimum of 60 minutes to ensure proper degreasing.
6. After the time has elapsed, rinse the cavity thoroughly.
7. The cavity is ready for the next processing steps.

## Tanked, assembled cavity

1. The cavity should arrive in the chemistry area with all testing blanks intact and in the vertical position on a cavity roll cart.
	1. If bags cover the flange areas, leave the bags on.
		1. Tape any holes in the bags if necessary to prevent further contamination.
2. Don appropriate PPE: A fresh pair of clean gloves and safety glasses. See room OSP and posted signs for guidance on hearing protection.
3. Blow off the entire cavity with filtered nitrogen to remove any loose dust and debris.
	1. Extra attention should be paid to the flanges (if accessible) and areas on the top of the helium vessel that are difficult to rinse.
4. Remove all covers, bags, tape, etc.
5. Using acetone soaked wipers first, then isopropyl soaked wipers, remove any tape, residual grease or residue that is visible.
	1. Razor blades made be used to remove tape.
	2. Pay close attention to the area around the valve on the bottom beamline flange for grease residue. This is where the vacuum connection will be made to attach the cavity to a test stand in order for VTA processing.
6. Wipe down the roll cart that the cavity is being transported on.
7. Cover the four openings on the helium vessel with clean caps.
	1. Tape as necessary to secure using clean room tape.
8. Pressure wash the helium vessel and cavity flanges.
	1. Pressure wash the flanges closely with the wand.
	2. Avoid spraying the coupler, burst disc, and connection ports directly with high pressure water.
	3. Pressure wash for a minimum of 15 minutes.
9. Use a DI water hose to rinse the entire cavity and helium vessel.
	1. Carefully rinse all flanges, ports, and crevices where the flanges and blanks meet to flush out any remaining particles.
10. Immediately dry the cavity with filtered nitrogen starting at the top and working toward the bottom.
	1. Spray in-between the flange and blank.
	2. Avoid spraying the burst disc directly and closely with nitrogen.
11. Allow the cavity to dry completely.
	1. This could take a couple hours to overnight.
12. Using filtered nitrogen, particle check the cavity. The particle counts must be below the following before proceeding:
	1. <10u on the 1.0 scale in critical areas (near the flanges)
	2. <100u on other areas
13. The cavity can then be rolled into the clean room pass through for further processing from the assembly group.

# References

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| **Document No.** | **Title** |
| SRF-01-ML-001 | SRF Quality Manual |
| <SRF-FM-###> | <Document Title> |
|  | [Production Chemistry Rooms OSP](https://mis.jlab.org/mis/apps/mis_forms/operational_safety_procedure_form.cfm?entry_id=83800) |

# Release and Revision History

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| --- | --- | --- |
| **Rev #** | **Major Changes** | **Effective Date:** |
| 1 | Initial version | 4/1/2021 |
| 2 | Update processing steps for tanked cavities to eliminate USC and unify processing | 12/21/21 |
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# Approvals

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