Standard Operating Procedure for Support Dissolving Solution

OxiClean

Section 1 – Lab-Specific Information

Building/Room(s) covered by this SOP:	**Bill & Melinda Gates Center for CSE, CSE2 G15**
Unit or department:	**Paul G. Allen School of CSE**
Chemical Hygiene Officer Name:	**Alexander Lefort**
Chemical Hygiene Officer Signature/Date:	Alexander Lefort 2024/05/07
This SOP was created by (if not PI): Name/Title	**Alexander Lefort Fabrication Research Lab Manager**

Section 2 – Hazards

Components:

Disodium Carbonate

Sodium Percarbonate

Alcohols, C12-C15, ethoxylated

Hazards:

Accute Oral Toxicity Category 4	H302
Eye Damage Category 1	H318
Aquatic Acute Toxicity Category 2	H401

Hazard Statements:

H302 – Harmful if swallowed.

H318 – Causes serious eye damage.

H401 – Toxic to aquatic life.

Precautionary Statements:

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, and eye protection.

P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor.

P330 - Rinse mouth.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Section 3 – Engineering Controls and Personal Protective Equipment (PPE)

Engineering controls

No required engineering controls for respiratory protection in the use of this product.

Hygiene measures

Avoid contact with skin, eyes, and clothing. Wash hands after removing PPE, before breaks, and immediately after handling the chemical. Any potentially exposed body parts should be washed immediately.

PPE is required when utilizing the support dissolving tank (filled with this product) or when changing out the solution in the tank:

Skin and body protection

Chemically compatible laboratory coats that fully extend to the wrist must be worn and be appropriately sized for the individual and buttoned to their full length. Personnel must also wear full-length pants, or equivalent, and close-toe shoes. The area of skin between the shoe and ankle must not be exposed.

Tyvek disposable lab coats are required during the use of the support dissolving tank and when handling OxiClean. Lab coats may be reused so long as no chemical spots are present and they are not torn or otherwise worn out. Store these lab coats only on the provided hooks near the entrance of the room and ensure that your name is written on the left breast pocket.

Hand protection

Hand protection is required for the activities described in this SOP.

Disposable nitrile gloves are required during the use of the support dissolving tank and when handling OxiClean. If the gloves do not fit properly, contact the lab manager to purchase the appropriate size for you.

In addition, there are heavier nitrile gloves present near the support dissolving tank to use when needing to reach further into the tank or when the tank is freshly complete from a cleaning cycle. YOU MUST WEAR DISPOSABLE NITRILE GLOVES EVEN WHEN WEARING THESE HEAVIER GLOVES. These heavy gloves will also protect you from the increased heat of the bath.

Gloves must be inspected prior to use, including a check for pinholes.

Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands immediately after glove removal.

Eye protection

ANSI Z87.1-compliant eye protection is required during the use of the support dissolving tank and when handling OxiClean. Ordinary prescription glasses will NOT provide adequate protection unless they also meet the Z87.1 standard and have compliant side shields.
Chemical splash goggles are required during the use of the support dissolving tank and when handling OxiClean.

Respiratory protection

Respiratory protection is not required for the activities described in this SOP.

Section 4 – Special handling and storage requirements

Only tools specific to the support dissolving tank should be used with OxiClean to avoid contamination of other tools. Rinse thoroughly and wipe down all contaminated surfaces with a dry paper towel.

Avoid prolonged contact with skin. Avoid prolonged breathing of vapors or mist.

Safe to dispose of contaminated rags, gloves, etc. in regular waste stream.

When work is completed, remove gloves and wash hands with soap and water.

Section 5 – Spill and accident procedures

Chemical spills must be cleaned up as soon as possible by properly protected and trained personnel. Ensure that you have nitrile gloves, Tyvek disposable lab coat, and splash goggles on. Contact the lab manager to report the spill and for advice during clean-up.

Avoid the release of dry powder form into the environment (e.g. sewers, storm drains, etc.).

You may utilize the fox tail broom and pale in the chemical spill kit to sweep up a spill:

1. Retrieve the lab spill kit from under the sink area.
2. Open the bucket and use from it the splash goggles and nitrile gloves inside, as well as grabbing a disposable lab coat to wear.

3. Once fully suited with PPE (nitrile gloves, splash goggles, lab coat), use the foxtail broom and pale to sweep up excess powder and collect into one of the yellow waste bags within the chemical spill kit.
4. Once excess powder is collected, use dampened paper towels to wipe the area clean, adding these to the yellow waste bags as well.
5. Dry the area with fresh paper towels and add these to the yellow waste bags.
6. Remove gloves and disposable lab coat and place into the waste bag and seal the bagby tying off the opening.
7. Label the bag with a properly filled out waste disposal label (see lab manager) and place the bag into the non-flammable waste cabinet.
8. Promptly wash your hands with soap and warm water. Done.

For questions on spill cleanup, contact EH&S spill consultants at 206-543-0467 during normal business hours (Monday-Friday, 8 a.m. to 5 p.m.).

Any spill, exposure or near miss incident requires the involved person or supervisor to complete and submit the UW Online Accident Reporting System (OARS) form on the EH&S website within 24 hours (certain types of incidents require immediate notification).

For questions on spill cleanup, contact EH&S spill consultants at 206-543-0467 during normal business hours (Monday-Friday, 8 a.m. to 5 p.m.).

Any spill, exposure or near miss incident requires the involved person or supervisor to complete and submit the UW Online Accident Reporting System (OARS) form on the EH&S website within 24 hours (certain types of incidents require immediate notification).

Exposures: If a person is injured, exposed, or suspected of being exposed to OxiClean, follow procedures listed here:

Perform first aid.

- **Inhalation exposure**: If irritation is experienced, move to fresh air and ventilate suspected area. Get medical attention if irritation or other symptoms develop and persist.
- **Ingestion**: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.
- **Sharps injury** (needle stick or subcutaneous exposure): Scrub exposed area thoroughly for 15 minutes using warm water and sudsing soap.
- **Skin exposure:** Remove contaminated clothing and drench the affected area for at least 15 minutes. If irritation develops and persists, get medical attention.
- **Eye exposure:** Rinse cautiously for at least 60 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get immediate medical advice/attention.
- **Most important symptoms and effects both acute and delayed:**
    - General: Harmful if swallowed. Causes serious eye damage.
    - Inhalation: Prolonged exposure may cause irritation.
    - Skin Contact: Prolonged exposure may cause skin irritation.
    - Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.
    - Ingestion: This material is harmful orally and can cause adverse effects or death in significant amounts.
    - Chronic Symptoms: Non expected under normal conditions of use.

Get Help.

- **Immediate medical attention is required if ingestion or eye contact has occurred. Show the safety data sheet to the doctor in attendance.**
- **Call** 9-1-1 or go to nearest Emergency Department (ED); provide details of exposure:
    - Agent
    - Dose
    - Route of exposure
    - Time since exposure
- **Bring the SDS and this SOP** to the Emergency Department
- **Notify your supervisor** as soon as possible for assistance
- **Secure the area** before leaving; lock doors and indicate spill if needed

Report the incident to Environmental Health & Safety.

- **Notify EH&S immediately** after providing first aid and/or getting help.
    - During business hours (M-F/8-5), call 206-543-7262.
    - Outside of business hours, call 206-685-UWPD (8973) to be routed to EH&S Staff On Call.
- Any spill, exposure or near miss incident requires the involved person or supervisor to complete and submit the UW Online Accident Reporting System (OARS) form on the EH&S website within 24 hours (certain types of incidents require immediate notification).

Section 6 – Waste accumulation and disposal procedures

The Fabrication Research Lab has two separate waste streams: flammable and non-flammable materials.

- Flammable waste materials must always be stored in the flammables cabinet.
- Non-flammable waste must always be stored in the non-flammable cabinet.
- Free-standing acids are not allowed in the space; Contact the lab manager if you run across these.

There are two forms of waste for this product:

Dry powder

To dispose of empty bags, ensure that they contain no more than 1% of the total volume of the container. If so, dispose of them within the regular landfill waste stream. If disposing of a container with more than this, label it with a properly filled out waste collection tag and place into the flammable chemical storage cabinet. Contact the lab manager for labels.

When more than three containers are ready for disposal, or a spill has occurred, contact the lab manager and they will submit a chemical waste collection request.

Aqueous solution in support dissolving tank

The aqueous solution within the support dissolving tank starts out very basic when freshly made. In this state, the solution must not be released into the sewers and must be captured in 5-gallon plastic waste buckets to be disposed. These must be labeled properly with a filled out waste collection tag and placed into CSE2 G15C for collection. Contact the lab manager for these labels.

As the solution is used, it becomes closer and closer to neutral pH. When saturated or near-saturated with support material, the solution enters the appropriate pH range (pH 6 – 9) to be properly discharged

into the sewer. In addition to the proper pH, the solution must not be above 34 degrees Celsius to be discharged into the sewers.

Only the lab manager should change the support dissolving tank solution.

All chemical waste containers must be labeled with a UW Hazardous Waste Label. Refer to How to Label Chemical Waste Containers.

To request a collection of chemical waste, submit a form on the Chemical Waste Disposal webpage on the EH&S website or directly in MyChem inventory. Contact EH&S at 206.616.5835 or chmwaste@uw.edu with questions.

Work area decontamination procedures as appropriate for the chemical in use should be followed.

Section 7 – Protocol

OxiClean must only be used with the support dissolving tank. See the Stratasys Support Dissolving Tank SOP for detailed usage of this machine.

NOTE: Any deviation from this SOP requires approval from the lab manager.

Section 8 – Special Precautions for animal use (☐ Yes X No)

N/A

Section 9 – Approvals required

Users must complete training on this chemical SOP and have completed the Stratasys F123 3D Printer Training, which covers the usage of the support dissolving tank, in order to work with OxiClean within the support dissolving tank.

Section 10 – Decontamination

Any tools and PPE used to reach into the support dissolving tank must be rinsed off at the lab sink. Rinsate from this procedure is fine to go down the drain. Dry off parts completely with a cloth or paper towel or allow them to dry on the stand next to the sink.

Section 11 – Designated area

OxiClean must only be used in the Stratasys support dissolving tank.

Section 12 – Documentation of training

- Prior to using substances included in this SOP, laboratory personnel must be trained on the hazards described in this SOP, how to protect themselves from the hazards, and emergency procedures.
- Ready access to this SOP and to a Safety Data Sheet for each hazardous material described in the SOP must be made available in the lab space(s) where these substances are used.
- The Principal Investigator (PI), or Responsible Party, if the activity does not involve a PI, must ensure that their laboratory personnel have attended appropriate laboratory safety training (and refresher training where applicable).
- Training must be repeated following **any** revision to the content of this SOP.

- Training must be documented. Trainings are documented via a Fabrication Research Lab Training Records spreadsheet. Please contact the lab manager for access: Aalefort@cs.washington.edu.