**BIGELOW LABORATORY FOR OCEAN SCIENCES**

**JOB HAZARD ANALYSIS (JHA)**

**Task Name:** Preparing culture media

**Task Description:** Filtering and enriching seawater, dispensing to flasks, autoclaving and returning to lab

**Name & Title of worker:** Joe Safety,Student

**Supervisor:** Dr. SRS

**Work area(s):** B105 (culture lab), A103 (autoclave room)

**Date:** 1/1/2018

Break the task into basic steps and write a description of each step, add more steps if necessary. For each step, determine and list potential hazards:

what could go wrong? List risk control measures that will be used to mitigate or eliminate the described hazards.

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| --- | --- | --- | --- |
| **Step** | **Step Description** | **Hazard Description** | **Risk Control Measures** |
| 1 | Filter seawater | Back strain from lifting heavy carboy; imploding vacuum flask; Spilling seawater could lead to slippery floors | Use proper lifting technique or use small containers; use less than 15 in Hg vacuum; wipe spills promptly |
| 2 | Add nutrients to seawater | Exposure to dilute chemicals; risk of broken glass; spill risk | Pipet carefully; use gloves, goggles, and lab coat; if glass is broken clean up immediately; wipe spills promptly |
| 3 | Autoclave flasks filled with media | Super-heated liquids and steam; potential for flask implosion/explosion if sealed | Receive autoclave training; wait until autoclave pressure is 0 and temp is <100C before opening; handle flasks with autoclave gloves; allow flasks to cool before transporting; double check that flasks are loosely capped |
| 4 | Move flasks to lab | Risk of broken glass; spill risk | Use cart or secondary containers to transport |
| 5 |  |  |  |
| 6 |  |  |  |

**Chemicals and gases used:**

List all chemicals and gases used in the task. Use information provided in the SDS (safety data sheet) to fill out NFPA rating, hazard labels and statements, and first aid measures columns. If the chemical has a NPFA rating of 3 or 4, indicate in which hazard. If waste will be generated, describe how it will be disposed of.

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| --- | --- | --- | --- | --- | --- |
| Chemical Name | NFPA Rating | NFPA of 3 or 4? | Hazard labels and statements | First Aid Measures | Waste Handling |
| f/2 basal salt mixture (dilute NaNO3, NaH2PO4, Na2SiO3) | 3,0,1,OX | Health | Corrosive, oxidizer, causes severe skin burns and eye damage. May cause respiratory irritation. Acute oral toxicity. | In case of skin contact, wash with soap. In case of eye contact flush with water for 15 minutes and consult physician. If swallowed do not induce vomiting, consult physician. | No waste generated |
| f/2 trace metal solution (dilute FeCl3, EDTA, CuSO4, Na2MoO4, ZnSO4, CoCl2, MnCl2) | 0,0,1,OX |  | Not classified as a hazardous mixture but does contain chemicals which are corrosive and harmful to the environment | In case of skin or eye contact, flush with water. If swallowed, rinse mouth with water | No waste generated |
| Vitamin solution (dilute B1, biotin, B12) | 0,0,0 |  | Not classified as a hazardous mixture | In case of skin or eye contact, flush with water. If swallowed, rinse mouth with water | No waste generated |
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**Hazard summary for task (check all that apply):**

[x] Chemical [x] Explosion [ ] Mechanical [x] Temperature

[ ] Electrical [ ] Fall [ ] Noise

[ ] Ergonomic [ ] Fire [ ] Radiation Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Personal Protective Equipment (PPE) required for task (check all that apply):**

[x] Gloves [ ] Fume hood/Snorkle [ ] Cryogenic gloves [ ] Ear protection

[x] Lab coat [ ] Close-toed shoes [x] Heat resistant gloves [ ] Face shield

[x] Safety glasses [ ] Clothing covering to knees [ ] Respirator Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_