**CPT**

**Earth Science**

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**Grade & Section:** 11 – STEM 3

**“Explosive Soap Foam”**

**I. Material Safety Data Sheet**

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| **MATERIAL SAFETY DATA SHEET – 9 SECTIONS** | | | |
| **SECTION 1 - PRODUCTION INFORMATION** | | | |
| Product Name | Hydrochloric acid | WHMIS Classification (optional) | --- |
| Product Use | Bleaching Agent | Supplier’s Name | --- |
| Manufacturer’s Name | Cleaning Industries | Physical and Mailing Address | --- |
| Physical and Mailing Address | --- | Emergency Contact Phone Number  WHMIS Classification (optional) | ---  --- |
| Emergency Contact Phone Number  Product Name  Product Use  Manufacturer’s Name  Physical and Mailing Address  Emergency Contact Phone Number  Product Name  Product Use  Manufacturer’s Name  Physical and Mailing Address  Emergency Contact Phone Number  Product Name  Product Use  Manufacturer’s Name  Physical and Mailing Address  Emergency and Contact N | ---  Dish Soap  Washing Agent  ---  ---  ---  Bubble Soap  Source of Entertainment  ---  ---  ---  Aluminum Foil  ---  ---  ---  --- | Supplier’s Name  Physical and Mailing Address  Emergency Contact Phone Number  WHMIS Classification (optional)  Supplier’s Name  Physical and Mailing Address  Emergency Contact Phone Number  WHMIS Contact Phone Number  Supplier’s Name  Physical and Mailing Address  Emergency and Mailing Address | ---  ---  ---  ---  ---  ---  ---  ---  ---  ---  --- |

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| **SECTION 2 – HAZARDOUS INGREDIENTS** | |
| This section describes the percent composition of the substance, listing chemicals present in the mixture. If it was tested as a mixture, list chemicals which contribute to its hazardous nature. Otherwise, list ingredients making up more than 1% and all carcinogens.  **Ingredient/Material:**  **Hydrochloric Acid-** This ingredient may cause eyes damage and severe burns: frequent exposure to caustic substances can brought conjunctivitis as well as dermatitis brought by extended skin exposure.  **Dish Soap-** Direct contact in eyes may result to irritation and lacrimation as well as ingestion wherein large amount ingestion may cause nausea, vomiting and gastrointestinal irritation. | |
| **SECTION 3 – PHYSICAL DATA** | |
| This section outlines the physical properties of the material. The information may be used to determine conditions for exposure. | |
| **Ingredient:** Hydrochloric acid (HCI) | **Ingredient:** Aluminum (Al) |
| * **Boiling Point:** 50.5 °C (123°F) * **Melting Point:** −25 °C (-13°F) * **Vapor Pressure:** 25 kPa at 25°C (estimate) * **Vapor Density (air=1):** 1.2 g/mL * **Solubility:** Miscible with water * **Appearance/Odor:** Transparent, Pungent, * and Irritating | **Boiling Point:** No Data Available   * **Melting Point:** 660 °C/ 1220 °F * **Vapor Pressure:** N/A * **Vapor Density (air=1):** N/A * **Solubility in Water:** N/A * **Appearance/Odor:** Silver/Gray, Odorless |
| **Ingredient:** Bubble Soap | **Ingredient:** Dish Soap |
| * **Boiling Point:** 100°C * **Melting Point: N/A** * **Vapor Pressure: N/A** * **Vapor Density (air=1):** N/A * **Solubility in Water:** Soluble   **Appearance/Odor:** viscous green liquid | * **Boiling Point:** 100°C (Approximately) * **Melting Point: N/A** * **Vapor Pressure: N/A** * **Vapor Density (air=1):** N/A * **Solubility in Water:** Soluble   **Appearance/Odor:** viscous green liquid |
| **SECTION 4 – FIRE AND EXPLOSION DATA** | |
| This section includes information regarding the flammability of the material and information for fighting fires involving the material.  **Ingredient/s:**  **Flash Point:**  **Auto ignition Temperature:**  **Flammable Limits:**  **Fire-fighting Procedures:** Not applicable  **Fire or Explosion Hazards:** No information found  **Ingredient/s:** Dish soap is nonflammable  **Flash Point:** Not applicable  **Auto ignition Temperature:** Not Applicable  **Flammable Limits:** May evolve toxic gases if strongly heated  **Extinguishing Media:** Nonflammable. Prevent contamination of drains  **Fire or Explosion Hazards:** No information found  **Ingredient/s:** Bubble Soap  **Flash Point:** Not applicable  **Auto ignition Temperature:** Not Applicable  **Flammable Limits:** No fire hazard exists  **Extinguishing Media:** Nonflammable. Prevent contamination of drains  **Fire or Explosion Hazards:** Not Applicable  **Ingredient/s:** Aluminum is a thermal decomposition that can lead to release of irritating gases and vapors  **Flash Point:** Not applicable  **Auto ignition Temperature:** Not Applicable  **Flammable Limits:** May evolve toxic gases if strongly heated  **Extinguishing Media:** No information found  **Fire or Explosion Hazards:** Not Applicable | |
| |  | | --- | | **SECTION 5 – REACTIVITY DATA** |   This section includes information regarding the stability of the material and any special storage or use considerations.  **Ingredient:** Hydrochloric Acid  **Reactivity Data:** Stable under normal conditions  **Ingredient:** Dish Soap  **Reactivity Data:** Stable under normal conditions of storage  **Ingredient:** Bubble Soap  **Reactivity Data:** Stable under recommended conditions  **Ingredient:** Aluminum Foil  **Reactivity Data:** Stable under normal conditions | |
| **SECTION 6 – TOXICOLOGICAL PROPERTIES** | |
| This contains toxicity information, either for the ingredients of the product or the product as a whole. This information can be quite technical and difficult to interpret.  **Ingredient:**  **Hydrochloric Acid:** It is corrosive to the skin as well as severe effects due to exposure to the eyes. Contact with the eyes may eventually lead to blindness, and dermatitis. Transitory obstruction in the respiratory tract diminishes with repeated exposure.  **Dish Soap:** Low toxicity. It has a low vapor pressure; therefore, inhalation hazard is not anticipated. Direct contact may still result to irritation, lacrimation, and conjunctivitis  **Bubble Soap:** No ingredient can be classified as inhalative toxic, classifications are not met in finding irritation, eye damage, respiratory, cell mutagenicity, and aspiration hazard.  **Aluminum Foil:** Delayed or immediate effects as well as chronic effects may be expected due to short term exposure. No further toxicity information is available. | |
| **SECTION 7 – PREVENTIVE MEASURES** | |
| The Preventive Measures section of the MSDS usually provides information on personal protective equipment, etc.  **Explosive Soap Foam-** This mixture is toxic because it contains Hydrochloric material. Be cautious of the measurements needed to perform this activity, do not inhale HCl.  **Personal Protective Equipment (PPE):**  Wear protective equipment before performing these experiments, make sure to have your own goggles and gloves to avoid any contact that will damage your eyes and hands.  This section outlines general procedures, precautions, and methods for cleanup of spills. Appropriate waste disposal methods are provided for safety and environmental protection.  **5 Steps to Dispose of Explosive Soap Foam Safely:**   * **Step 1:** Make sure to remove the tube out of Buchner flask carefully without having a direct contact to hydrochloric chemical, use gloves in doing so. * **Step 2:** Prepare a container * **Step 3:** Pour first the mixture of dishwashing soap and bubble soap in the sink. * **Step 4:** Ready a container * **Step 5:** Pour the used hydrochloric acid with melted aluminum foil in a container with a hand protection to avoid direct contact to the hazardous substance.   **5 Steps to Clean the raw ingredients Safely.**   * **Step 1:** Isolate the raw material as soon as the experiment is done. * **Step 2:** Do not waste, keep the unused raw ingredient. * **Step 3:** Prepare a container. * **Step 4:** Label the container with its name indicated on it. * **Step 5:** Store the container to a proper storage room to avoid occurrence of unwanted events. | |
| **SECTION 8 – FIRST AID MEASURES** | |
| Based on the toxicity of the product, degree of exposure and route of contact (eye, skin, inhalation, ingestion, injection), emergency and first aid procedures are recommended in this section. Additional cautionary statements, i.e.,  **First Aid Measures:** If hydrochloric.   * After skin contact, flushed affected with plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention immediately. * After contact with eyes, flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. * After contact with the mouth or ingestion, do not induce vomiting. If vomiting occurs, keep head low so that vomit does not enter lungs. * After inhalation, remove to fresh air if breathing is difficult, administer oxygen | |
| **SECTION 9 – PREPARATION INFORMATION** | |
| This section contains the information of the researchers who prepared this MSDS with their contact information  For any inquiries, please contact the main researchers:    Mariel Banal  [mariel.banal.mnl@eac.edu.ph](mailto:mariel.banal.mnl@eac.edu.ph)  Joshua Ilagan  [joshuamiguel.ilagan.mnl@eac.edu.ph](mailto:joshuamiguel.ilagan.mnl@eac.edu.ph)  Juliana Mercado  [juliana.mercado.mnl@eac.edu.ph](mailto:juliana.mercado.mnl@eac.edu.ph)  Aiko Yasmine Nakamura  [aikoyasmine.nakamura.mnl@eac.edu.ph](mailto:aikoyasmine.nakamura.mnl@eac.edu.ph)  Jamilla Nichole Novilla  [jamillanichole.novilla.mnl@eac.edu.ph](mailto:jamillanichole.novilla.mnl@eac.edu.ph)  Agatha Ysabelle Sotto  [agathaysabelle.sotto.mnl@eac.edu.ph](mailto:agathaysabelle.sotto.mnl@eac.edu.ph) | |