

Laboratory Standard Operating Procedure

(For use of general classes of hazardous materials or equipment in room 409)

Name of Procedure: Handling of base bath

Prepared by: Marina Tanasova

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Location-This procedure may be performed at the following location(s): Chem. Sci. Bld. Room 409

Special Handling and Storage Requirements

- Do not make excessive amounts of base bath solution; only make what can be safely stored in the laboratory.
- Containers should be labeled appropriately. Label should indicate the name of the chemical(s) in the container. Avoid using chemical abbreviations (acceptable if a legend is present in the lab) and formulae.
- Glassware with excessive grime should first be rinsed with an appropriate solvent (such as water and a little acetone). Collect the rinsate in a separate container, label with all constituents, and submit to REM as waste.
- If the glassware is greased, excess grease should be removed with a paper towel.
- Do not place broken glassware in the base bath as this may break the glass completely and produce glass shards. Check all items before placing in the bath.
- Do not leave glassware in the base bath for more than one overnight period. Prolonged soaking in the bath will lead to degradation and consequent thinning of the glass.
- Take care not to cause the bath to overflow. The base bath should be placed in a tray capable of containing the full bath volume in the event that the bath container fails.
- Keep container upright & closed in a dry.
- Base baths solutions must be stored in appropriate containers such as a heavy duty HDPE Nalgene container. Do not store base bath solutions in metal containers. Do not store base bath solutions Rubbermaid containers or other non-chemical approved storage containers.
- Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
- Keep away from incompatible materials such as acids and oxidizing materials. Keep away from sources of ignition. Avoid heat and shock or friction when handling.
- Containers should remain closed when not in use.

Hazards- The following materials and equipment associated with this procedure present exposure or physical health hazards. Safety precautions are prudent and mandatory:

Base baths are highly concentrated alcoholic hydroxide solutions used to clean glassware after use. The solutions consist of Ethanol or Isopropanol and Sodium or Potassium hydroxide. The glassware is cleaned by chemically dissolving contaminated surfaces.

Base baths are flammable and corrosive. They may be harmful if inhaled, ingested, or absorbed through the skin. Inhalation may cause irritation to the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. It is destructive to the tissue of the mucous membranes and upper respiratory tract. Inhalation of solvent vapors may

cause chronic toxic effects in the liver or kidney. Contact with skin causes burns and irritation. Prolonged or repeated skin exposure may cause skin defatting or dermatitis. Eye contact causes burns, irritation, and may cause blindness. Ingestion may cause permanent damage to the digestive tract. Flash fires may occur in the presence of ignition sources.



A current copy of the SDS for the specific base bath solution being used must be made available to all personnel working in the laboratory at all times. To obtain a copy of the SDS, contact the chemical manufacturer or REM at 49-46371. Many manufacturers' SDSs can be found online on websites such as Sigma-Aldrich (<http://www.sigmaaldrich.com/united-states.html>)

Engineering Controls- Prior to performing this procedure, the following safety equipment must be accessible and ready for use: (ex. Chemical fume hoods, laminar flow hood, chemical spill kits)

Chemical spill kit

Protective Equipment-Prior to performing this procedure, the following personal protective equipment must be obtained and ready for use:

Respirator Protection:

If base baths are being used outside of a chemical fume hood, respiratory protection may be required. If this activity is absolutely necessary, contact REM so a respiratory protection analysis can be performed. Respirators should be used under any of the following circumstances:

- As a last line of defense (i.e., after engineering and administrative controls have been exhausted).
- When Permissible Exposure Limit (PEL) has exceeded or when there is a possibility that PEL will be exceeded.
- Regulations require the use of a respirator.
- An employer requires the use of a respirator.
- There is potential for harmful exposure due to an atmospheric contaminant (in the absence of PEL)
- As PPE in the event of a chemical spill clean-up process

Lab personnel intending to use/wear a respirator mask must be trained and fit-tested by REM. This is a regulatory requirement.

(<http://www.purdue.edu/rem/home/booklets/RPP98.pdf>)

Hand Protection:

Gloves must be worn. Use proper glove removal technique to avoid any skin contact. Nitrile gloves layered underneath butyl rubber gauntlet-style gloves are recommended. Check the resources below for the most suitable glove.

NOTE: Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with the specific base bath solution being used.

Refer to glove selection chart from the links below:

(http://www.ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf)



OR

<http://www.showabestglove.com/site/default.aspx>

OR

<http://www.mapaglove.com/>

Eye Protection:

ANSI approved properly fitting safety glasses or chemical splash goggles are required. A face shield may also be necessary when there is a potential for splashes.

Skin and Body Protection:

Laboratory coats must be worn and be appropriately sized for the individual and buttoned to their full length. Laboratory coat sleeves must be of sufficient length to prevent skin exposure while wearing gloves. Personnel should also wear full length pants, or equivalent, and close-toed shoes. Full length pants and close-toed shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle should not be exposed. Aprons may also be appropriate depending on the application.

Hygiene Measures:

Wash thoroughly and immediately after handling. Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Waste disposal-This procedure will result in the following regulated waste which must be disposed of in compliance with environmental regulations:

Non-toxic waste. Glassware can be safely washed in the sink.

For used base bath disposal, transfer the solution to a heavy duty container (such as Nalgene bottle/carboy). Make sure the waste container(s) is properly labeled; label should indicate all of the contents of the container, including any potential organic contaminants from cleaning process. REM provides hazardous waste labels free of charge, call 49-40121 to obtain labels.

Accidental Spill- In the event that a hazardous material spills during this procedure, be prepared to execute the following emergency procedure:

DO NOT expose to water (flammable upon reaction with water).

Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable and closed containers for disposal.

Prior Approval- This procedure is considered hazardous enough to warrant prior approval from the laboratory director. **Yes**

Certification- I have read and understand the above SOP. I agree to contact my Supervisor if I plan to modify this procedure.

Signature _____ Name (print) _____

Date _____ Room _____