Standard Operating Procedure

**Benzoyl Peroxide**

*This is an SOP template and is not complete until: 1) lab specific information is entered into the box below 2) lab specific protocol/procedure is added to the protocol/procedure section and
3) SOP has been signed and dated by the PI and relevant lab personnel.*

 Print a copy and insert into your
*Laboratory Safety Manual* and *Chemical Hygiene Plan*.
Refer to instructions for assistance.

|  |  |
| --- | --- |
| **Department:** | Click here to enter text. |
| **Date SOP was written:** | Click here to enter a date. |
| **Date SOP was approved by PI/lab supervisor:** | Click here to enter a date. |
| **Principal Investigator:** | Click here to enter text. |
| **Internal Lab Safety Coordinator/Lab Manager:** | Click here to enter text. |
| **Lab Phone:** | Click here to enter text. |
| **Office Phone:** | Click here to enter text. |
| **Emergency Contact:** | Click here to enter text. |
| *(Name and Phone Number)* |
| **Location(s) covered by this SOP:** | Click here to enter text. |
| *(Building/Room Number)* |

**Type of SOP:** [ ]  Process [x] Hazardous Chemical [x]  Hazardous Class

**Purpose**

**Benzoyl peroxide, also known as Dibenzoyl peroxide,** is a strong oxidizer and a potentially explosive chemical (PEC). It is used as a radical initiator to induce polymerizations. It can be used in acne treatment as a peeling agent and can be used in the preparation of flour.

**Physical & Chemical Properties/Definition of Chemical Group**

CAS#: 94-36-0

Class: **Oxidizer, potentially explosive chemical (PEC)**

Molecular Formula: C14H10O4

Form (physical state): Solid

Color: White

Melting point: 103-105oC

**Potential Hazards/Toxicity**

May cause skin and eye irritation. May be harmful if absorbed through the skin. Readily absorbed through skin. May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if swallowed.

**Personal Protective Equipment (PPE)**

**Respirator Protection**

Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator and type N100 (US) respirator cartridges as a backup to engineering controls.

Respirators should be used only 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 ORS and should contact occhealt@uga.edu. This is a UGA requirement described in more detail in the [UGA Respiratory Protection Plan](https://esd.uga.edu/sites/default/files/respiratoryprotection.pdf) and supported by the [Office of Research Occupational Health and Safety Program](https://research.uga.edu/ohsp/).

**Hand Protection**

One of the following types of gloves is recommended: Nitrile/Neoprene/Natural Rubber/Butyl Rubber/ PVC/Viton.

NOTE: Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with Benzoyl peroxide. Gloves must be inspected prior to use. 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.

Refer to glove selection chart from the links below:

<http://www.ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf>

OR

<http://www.allsafetyproducts.biz/page/74172>

OR

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

OR

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

**Eye Protection**

ANSI-approved safety glasses or goggles. Face shield is also recommended.

**Skin and Body Protection**

Flame-resistant lab coats should be worn. These laboratory coats must be appropriately sized for the individual and be buttoned to their full length. Laboratory coat sleeves must be of a sufficient length to prevent skin exposure while wearing gloves. 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

**Hygiene Measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling benzoyl peroxide.

**Engineering Controls**

All operations involving Benzoyl peroxide must be carried out in a certified chemical fume hood.

**First Aid Procedures**

**If inhaled**

Remove to fresh air. If breathing becomes difficult, call a physician.

**In case of skin contact**

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**In case of eye contact**

Flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**If swallowed**

Wash out mouth with water provided person is conscious. Call a physician.

**Special Handling and Storage Requirements**

Use only polyethylene tools and containers. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Keep tightly closed. Do not store near, nor allow contact with, clothing and other combustible material. Avoid contact with metals and alcohols. Store in a Fire-Resistant storage cabinet or lab-grade refrigerator/freezer approved for such storage.

**Spill and Accident Procedure**

**Chemical Spill Dial 911**

**24-7 On-Call Response to Research, Environment, Health or Safety Concerns Dial 2-5561 from a campus phone or 706-542-5561 from a non-campus line.**

**Spill** – Follow the procedures set out in the [UGA Chemical and Laboratory Safety Manual.](http://research.uga.edu/docs/units/safety/manuals/Chemical-Laboratory-Safety-Manual.pdf)

[If there are any chemical-specific protocols for responding to a spill, insert them here or mark “none”:]

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# **Medical Emergency Dial 911**

**Life Threatening Emergency, After Hours, Weekends and Holidays** – Dial **911** or the emergency phone numbers listed at the beginning of the UGA Chemical and Laboratory Safety Manual.

*Note: All incidents that result in an injury or property damage must be reported to ORS / ESD using a University Incident/Accident Report.*

**Non-Life Threatening Emergency** – Follow the instructions in the UGA Chemical and Laboratory Safety Manual.

*Note: All incidents that result in an injury or property damage must be reported to ORS / ESD using a University Incident/Accident Report.*

**Decontamination/Waste Disposal Procedure**

**For general hazardous waste disposal procedures, see Appendix H of the UGA Chemical and Laboratory Safety Manual.**

**Chemical Specific Procedures: [to be inserted or marked as “none”]**

No waste streams containing potentially explosive chemicals (PECs) shall be disposed of in sinks. Decontaminate work space with 70-75% ethanol. Wash hands and arms with soap and warm water after finished.

**Safety Data Sheet (SDS) Location**

UGA personnel can access Online SDS through a link in the upper left corner of the ESD home page (<https://esd.uga.edu>) and logging in by using their UGA email user name and password.

**Protocol/Procedure (Add lab specific Protocol/Procedure here)**

Click here to enter text.

**NOTE**

Any deviation from this SOP requires approval from PI.

**Documentation of Training** (signature of all users is required)

* Prior to conducting any work with Benzoyl peroxide, designated personnel must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.
* The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP and access to the SDS provided by the manufacturer.
* The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate laboratory safety training or refresher training within the last 12 months.

**Principal Investigator SOP Approval**

Print name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Approval Date:

I have read and understand the content of this SOP:

|  |  |  |
| --- | --- | --- |
| **Name** | **Signature** | **Date** |
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