Standard Operating Procedure

**Acetyl 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 ☒Hazardous Chemical ☐ Hazardous Class

**Purpose**

Acetyl peroxide is a Potentially Explosive Chemical (PEC) and a strong oxidizer. It is used as an initiator and catalyst for certain resins. In manufacturing, it is used to promote polymerization of some plastics.

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

CAS#: 110-22-5

Class: **Potentially Explosive Chemical, Strong Oxidizing Agent**

Molecular Formula: C4H6O4

Form (physical state): Solid crystals

Color: Colorless

Boiling point: 30 ºC

**Potential Hazards/Toxicity**

**Inhalation:** Cough, tachypnea, and wheezing are common after inhalation.

**Ingestion:**Nausea, vomiting and diarrhea are possible.

**Skin Contact:**Redness, swelling and pain may occur.

**Eye Contact:**May cause irritation, redness, and pain.

**Personal Protective Equipment (PPE)**

**Respiratory Protection**

A ½ or full face respirator equipped with appropriate cartridges should be used any time there is the potential for exposure to vapor and/or dust and a fume hood cannot be used.

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**

Wear nitrile gloves are recommended.

NOTE: Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with Acetyl Peroxide

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**

Wear ANSI approved safety glasses.

**Skin and Body Protection**

Wear long pants, closed-toe shoes, and a lab coat while handling.

**Hygiene Measures**

Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse

**Engineering Controls**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use in a chemical fume hood.

**First Aid Procedures**

**If inhaled**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**In case of skin contact**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash off with soap and plenty of water. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**In case of eye contact**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**If swallowed**

Charcoal is not recommended; it may promote vomiting and make endoscopic evaluation difficult. Immediately dilute with 4 to 8 ounces (120 to 240 ml) of milk or water (not to exceed 4 ounces/120 ml in a child). Although these agents are irritants, and therefore should not produce tissue damage, it is almost impossible to assure that a particular substance under a particular set of circumstances would not cause damage. Therefore, each patient should be examined with the idea that mucous membrane damage might have occurred.

**Special Handling and Storage Requirements**

**Precautions for safe handling**

All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood. Wash thoroughly after handling.

**Conditions for safe storage**

Keep in a cool, dry, dark location in a tightly sealed container or cylinder. Keep away from reducing agents, other organic compounds, ignition sources and untrained individuals. Secure and label area. Protect containers/cylinders from physical damage.

**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”]**

**Waste disposal procedures:** Acetyl peroxide waste shall be disposed of into waste containers specifically designated for acetyl peroxide. Examples of acetyl peroxide waste material include gloves, pipette tips, paper towels that have been contaminated with acetyl peroxide. Dispose of the used acetyl peroxide and materials contaminated with acetyl peroxide as hazardous waste.

**Decontamination of Equipment:** Equipment that needs to be decontaminated (for repair or change of location etc.) must be washed with soapy water and rinsed with copious amounts of water.

**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 Acetyl 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:

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