



Alpha Chi Sigma Fraternity

Professional in the Chemical Sciences

CHEMICAL DEMONSTRATION PLANNING GUIDE



WHAT CONSTITUTES A CHEMICAL DEMONSTRATION?

A Chemical demonstration is any experiment performed to entertain or educate an audience.

A Chemical is any reagent or catalyst used in the chemical demonstration being performed. Point of origin for the chemical has no bearing as to whether the item can or can't be classified as a chemical. Chemicals can be obtained from scientific supply companies, grocery stores, specialty stores, etc.

Please follow ACS Demo Guidelines:

https://www.acs.org/content/dam/acsorg/education/policies/safety/divched_2018_safetyflyer2pager_proof1.pdf

EVENT DETAILS

1. Who is planning the event?

Organization: _____

Name: _____

Officer Title: _____

Email: _____

Phone: _____

2. Name/Theme of event: _____

3. Date of the event: _____

4. Beginning time of event: _____ AM PM

5. Ending time of event: _____ AM PM

6. Who is the contact for the performance site? What is their contact information?



7. Location of event:

- Host chapter's college/university
- Other educational institution
- Museum
- Commercial facility (mall, hotel, etc.)
- Government property (Federal, City, State, etc.)
- Other: _____

Name of location: _____

8. Event setting:

- Traditional/Lecture classroom
- Laboratory
- Mall/Large open area/hallway
- Meeting room/conference hall
- Other: _____

9. Which best describes the event below? Check all that apply.

Purpose of the event

- Educational
- Entertainment
- Hands-on demonstrations
- Other: _____

Size of the crowd? (If multiple types, please specify which applies)

- <10 people
- 10 -20 people
- 20 - 40 people
- 40+ people



Age range for crowd

- All ages
- Elementary/Middle School (typically kindergarten - 5th grade)
- Junior High School (typically 6th - 8th grade)
- High School (typically 9th - 12th grade)
- College
- Adult

Will this feature any audience participation?

- None
- Minimal
- Audience participation will be an integral aspect to the show

10. Please describe the hazard involved in any **non-hands-on** aspects of the show.

- This event only contains **hands-on** demonstrations
- Projectiles
- Explosions
- Low temperatures
- High temperatures (oven, hotplate, etc.)
- Open flame/heating element
- Flammable materials
- Concentrated acids/bases
- Oxygen displacement materials
- Sharp objects
- Volatile
- Toxicity



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- Toxicity
- Choking hazard

12. Please attach a list of all demonstrations in the event.

- All methods have been reviewed and approved as required by Alpha Chi Sigma policy.
 - Access to the SDS for any chemical used in the event will be available at the event. Access in this case refers to having a physical copy present or the ability to quickly access the SDS electronically and provide a physical version of the SDS in the event of an emergency.
 - All required SDS have been verified as being up-to-date.
 - Presenters have been trained on the chemical demonstration that they are performing and have demonstrated that they may perform it in a safe and secure manner.



HOW WILL REAGENTS GET TO THE EVENT?

13. Have the following been considered?

- Non-compatible materials have been identified and separated. All individuals involved in all aspects of the event (including performance and transportation) have been educated on what materials should be kept separate.
- Only the bare minimum of the chemicals needed should be considered for transportation. All containers have been inspected for appropriateness and to ensure that they are in good working order. All containers shall be appropriately labeled with contents, your chapter name, Alpha Chi Sigma, chapter's university address, and contact information in the event of them being left somewhere inadvertently.

In the event that reagents must be moved outside the building, Alpha Chi Sigma chemical demonstrations should fall under the Materials of Trade exceptions for the DOT. Chapters should consult with these regulations prior to transportation to ensure that applicable laws are being followed.

- A list of chemicals and approximate quantities has been created.
- Appropriate container(s) have been brought to deal with any generated waste. Labels should clearly state Waste, your chapter name, Alpha Chi Sigma, and the chapter's university address. If the event site has agreed to properly dispose of any waste, this requirement may be ignored and the event site's rules shall be followed.
- All containers are in appropriate secondary containment.
- In the event that oxygen displacement chemicals are being used, all participants have been trained on what to do during transportation should an emergency occur.
- In the event of an emergency occurring during transportation, what is the chapter's emergency action plan:



SAFETY AND PERSONAL PROTECTIVE EQUIPMENT

14. What Personal Protective Equipment (PPE) is required? _____

Methods are marked in such a way that each experiment's required PPE is clearly identified and easy to find.

Appropriate quantities of PPE are present so that all presenters are appropriately equipped.

15. How far back should the crowd be from the chemical demonstration? _____

An appropriate number of individuals will be present to ensure that the crowd may be kept at a safe distance and kept reasonably under control.

Pathways to emergency exits should be clearly delineated and free from obstructions.

16. What safety equipment is needed? (fire extinguishers, eye wash, fire blanket?)

This equipment has been tested or is within its retest/expiry date

Individuals who have received training with this safety equipment are present



17. What are possible problem scenarios that presenters may encounter?
Do the presenters feel comfortable dealing with these scenarios?
You may attach additional sheets as you see fit.

18. What is the plan to deal with waste and disposal of waste? _____

19. Are there any site-specific safety rules that presenters must be trained on?
Have the presenters been trained?

20. In the event of an emergency alarm going off, have presenters been trained on what
the various emergency alarms sound like and how to differential different alarms?
(e.g. fire alarm, severe weather, etc.)

HANDS-ON DEMONSTRATIONS

21. What chemical demonstrations are being performed that will have aspects of
Hands-On or Audience participation? _____

22. What aspects of the chemical demonstration are you allowing non-presenters to
handle/touch? _____



23. What specifically can go wrong? _____

24. Who is responsible for going over the participation rules with the audience? _____

Are additional presenters/members needed for crowd control or assistance?
If so, how many? _____

Should the audience be broken up into a small group size?
If so, what size works best? _____

25. What PPE is required for the audience? _____

26. Have these demonstrations been evaluated for contact allergens? This includes Latex and the FDA Big 8 (Milk, Eggs, Fish (e.g., bass, flounder, cod), Crustacean shellfish (e.g., crab, lobster, shrimp), Tree nuts (e.g., almonds, walnuts, pecans), Peanuts, Wheat, Soybeans)

Was the topic of contact allergens discussed during the participation rules?
Who should the members of the audience turn to in order to ask further details/clarification?

27. How are you going to have SDS available for review by the audience?

28. How are you going to ensure that non-audience participation chemical demonstrations are kept separate from audience participation ones?

29. How are you going to ensure proper hygiene including proper hand washing?