

Regional Chem-E-Car Competition™ Dates: February-April 2015

Safety Checklist

The following safety requirements must be met in order to compete in this year's Regional competition:

1. **The Engineering Documentation Package (EDP) MUST be completed and placed on the SharePoint site by the deadline. Check the AICHE website for details on the deadline for your specific Region.**

The Engineering documentation package for your Chem-E-Car includes the following items in the following order: (Please PDF your entire document for ease in reviewing)

- a) JSA
- b) A description of your car and how it works, include a diagram or picture of the vehicle.
- c) A complete list of every piece of equipment on the car in table format, including in the list the manufacturer of the equipment. Include either the manufacturer's specification documents or specifications for custom-built components. Include operating limits (max temperature and pressure) for each piece of equipment, and ensure material compatibility where pertinent. Where manufacturing spec sheets are absent, students should rely on the material properties for these limits.
- d) Standard operating procedures.
- e) A description of the chemistry involved.
- f) A quantitative design basis for pressure relieving load.
- g) Sizing calculations for a pressure relief device.
- h) Test procedure and results for a pressure relief.
- i) Car experimentation area floor plan.
- j) Management system for chemical use and disposal.
- k) Management system for approval of changes in your vehicle. There is a form for this posted on the AICHE website.
- l) A picture of your vehicle after construction has been completed. These pictures must be current. The entire car must be visible in the picture. Remove the top to expose electrical controls if necessary. Multiple views of the car are encouraged.
- m) Certification page signed by your faculty member.
Have the engineering documentation package reviewed by your faculty advisor to insure that you have identified the major hazards and have

controlled them properly. It is also recommended that you also enlist the assistance of an outside safety expert or another faculty member with expertise in this area.

- n) Safety Rules Verification page. Judges will use this page to determine whether or not the starting and stopping mechanism is compliant with the rules. Please be descript.
 - o) Material Safety Data Sheets for all chemicals.
2. **Complete the Certification page.** Have the engineering documentation package reviewed by your faculty advisor to ensure that you have identified the major hazards and have controlled them properly. It is recommended that you also enlist the assistance of an outside safety expert or another faculty member with expertise in this area. **This review must be complete by the deadline. Note that your group must have a minimum of 10 hrs of operating time on the car prior to the faculty member signing.**
 3. Make any changes to your vehicle and engineering documentation to address any issues identified in Step 2. Obtain a final review by your faculty advisor if changes to your car are required.
 4. Upload your engineering documentation package and signature page to the AICHE website, as per instructions provided via email. **This must be completed by the deadline no later than 5 pm (standard time in your area).** Failure to meet this deadline will result in disqualification of your vehicle.
 5. Ship your car to the designated University hosting the competition. See the AICHe website for the shipping address and information for both cars and chemicals. Ship at least 1 week prior to the competition to avoid shipping delays. Schools are not allowed to ship chemicals directly to the competition site, without obtaining proper approval from the hosting University for a select list of common household chemicals, such a baking soda. Most chemicals will need to be shipped directly from the chemical supply store/manufacturer. Make sure you put your school's name and team name on the packages you send. You may elect to transport your vehicle to the competition site. You will not be allowed to transport chemicals.
 6. Have your vehicle, engineering documentation package and poster ready for pre-competition inspection on the date of the competition.
 7. Prepare your chemicals and vehicle for competition. The prep area will be in announced at the pre-competition inspection.