Chemical Inventory Limits

**Purpose** – Comply with all United States Department of Homeland Security regulations pertaining to the storage of “Chemicals of Interest” at the ASU MacroTechnology Works.

**Reference Documents** –

U.S. Department of Homeland Security, Chemical Facility Anti-Terrorism Standard (CFATS), Appendix A

**Policy** -- The ASU MacroTechnology Works will maintain on-site chemical inventories below the Screening Threshold Quantities (STQ) for all chemicals listed in CFATS Appendix A.

**Procedure** –

1. All users of chemicals listed in the attachment must coordinate their orders with EH&S and Air Products Megasys/Chemical Operations personnel to ensure that the inventory limits are not exceeded.
2. Any delivery of any of the chemicals listed in the attachment that would result in the ASU MacroTechnology Works exceeding the limits listed in Appendix A will be refused by Air Products Megasys/Chemical Operations personnel.
   a. Any costs associated with the refusal of the delivery shall be the responsibility of the department/person ordering the chemical.
3. Requests for all new chemicals must be reviewed by EH&S **BEFORE** purchase to ensure that the screening threshold quantity limits in Appendix A will not be exceeded. EH&S will review the CFATS status of the material with the requestor and work with the requestor to develop an acceptable strategy to allow the use of critical materials at the MacroTechnology Works.
   a. If new chemicals are received before being reviewed and approved, they may be refused upon delivery.
   b. Any costs associated with the refusal of the delivery shall be the responsibility of the department/person ordering the chemical.

**Notes** --

1. The ASU MacroTechnology Works does not have the required licenses to accept explosive or radioactive materials. Any explosive or radioactive material delivered to the MacroTechnology Works will be refused by Air Products Megasys/Chemical Operations personnel.
2. All chemical deliveries must be made directly to Air Products Megasys/Chemical Operations personnel. No chemical deliveries are allowed at the lobby desk or at the shipping/receiving dock.
3. Several other programs regulate the quantities of chemicals that can be on the MacroTechnology Works site. Compliance with the limits in Appendix A does not ensure that the other limits have been met.

EH&S. Date Updated May 2016
Contact Information phone (480-965-1823)
Attachment/Examples

<table>
<thead>
<tr>
<th>Chemical of Interest</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
<th>STQ (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron tribromide</td>
<td>10294-33-4</td>
<td>12.67%</td>
<td>45</td>
</tr>
<tr>
<td>Boron trichloride</td>
<td>10294-34-5</td>
<td>84.7%</td>
<td>45</td>
</tr>
<tr>
<td>Chlorine</td>
<td>7782-50-5</td>
<td>9.77%</td>
<td>500</td>
</tr>
<tr>
<td>Dichlorosilane</td>
<td>4109-96-0</td>
<td>10.47%</td>
<td>45</td>
</tr>
<tr>
<td>Hydrogen chloride (anhydrous)</td>
<td>7647-01-0</td>
<td>Any</td>
<td>500</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>68%</td>
<td>400</td>
</tr>
<tr>
<td>Phosphine</td>
<td>7803-51-2</td>
<td>0.67%</td>
<td>15</td>
</tr>
</tbody>
</table>

Example –

Boron trichloride is normally supplied in cylinders containing 35 pounds of 100% BCl₃. The MacroTechnology Works is limited to less than 45 pounds on-site at any time. A spare cylinder of boron trichloride shall not be delivered until the current inventory is below 10 pounds.

Example –

Dichlorosilane is normally supplied in cylinders containing 40 pounds of 100% H₂SiCl₂. The MacroTechnology Works is limited to less than 45 pounds on-site at any time. A spare cylinder of dichlorosilane shall not be delivered to the site until the current inventory is below 5 pounds.

Example –

Nitric acid is normally supplied in glass bottles containing 7.1 pounds of 69.5% acid. The MacroTechnology Works is limited to less than 400 pounds on-site at any time. This is the equivalent of 56 bottles, including those bottles that have been delivered to the labs on-site.

Example –

A requestor wishes to purchase and use a toxic hydride gas at a concentration and quantity that exceeds the STQ in Appendix A. EH&S will require that a smaller quantity of the material be purchased, or a lower concentration be specified in order to avoid exceeding the limits in Appendix A.