3810 West Temple Avenue
Office of Environmental Health and Safety
Division of Administrative Affairs

Cal Poly Pomona

Cal Poly Pomona: List of Chemicals, Materials, & Equipment Requiring EH&S Pre-Approval Prior to Purchase

Purpose

This document establishes a formalized list of chemicals, materials, and equipment that require pre-approval from Cal Poly Pomona's Environmental Health & Safety (EH&S) office before being purchased through university procurement systems, including P-card, Purchase Orders, and Foundation/CPPE Accounts. The intent is to proactively identify hazardous materials or regulated items that could pose significant risks to health, safety, or environmental compliance.

Objective

The objective of this document is to assist campus purchasers, Principal Investigators (PIs), research staff, laboratory managers, and procurement personnel in determining which items are subject to EH&S review. This pre-approval process ensures that proper authorizations, safety controls, and regulatory compliance are in place prior to acquisition.

Scope

This document applies to all Cal Poly Pomona departments, colleges, research groups, and auxiliaries that procure chemicals, gases, biologically hazardous materials, radiation-emitting equipment, or safety-sensitive equipment. The list and is intended to support:

- Risk reduction for high-hazard substances and equipment
- Compliance with Cal/OSHA, DEA, NRC, and CSU safety policies
- Prevention of regulatory violations, exposures, and unsafe conditions
- Proper licensing, training, labeling, and inventory procedures

Campus departments may submit a request for EH&S review via the CPP EH&S Purchase Approval Request Form

Guidelines and Instructions

To request EH&S pre-approval, all purchasers must complete the official EH&S Procurement Approval Intake Form, available online at: CPP EH&S Purchase Approval Request Form. The form must be submitted and approved prior to ordering any items listed in this document. Submissions must include:

- An itemized shopping cart or quote
- Current SDS(s) for each chemical or hazardous material
- Vendor contact information
- A description of storage and intended use, if applicable
- Any applicable licenses or permits (e.g., DEA, radioactive materials)

EH&S will review submissions and issue an approval number for reference in campus procurement systems. Incomplete requests or purchases made without EH&S approval may be delayed or denied.

The table below outlines general categories of chemicals, materials, and equipment that require EH&S review and approval before purchase:

MATERIAL TYPE	REASON FOR PURCHASE CONTROL
Cal/OSHA Regulated Carcinogens (see attached list)	Cal/OSHA Title 8 §§5198–5220: SOPs, training, designated work area signage, Cal/OSHA notification, air exposure monitoring required.
Highly Toxic Gases (see attached list)	Inhalation hazards, exposure monitoring, release monitoring, alarm systems required.
Pyrophoric Materials	Extremely flammable; ignite spontaneously upon exposure to air. Requires inert gas handling, air-free techniques, and lab-specific SOPs.
Water-Reactive Materials	May violently react with water or moisture; requires special containment and spill control procedures.
Class A Peroxide-Forming Chemicals (Inhibited or Uninhibited)	Includes compounds (e.g., diethyl ether, isopropyl ether, sodium amide) that can form explosive peroxides during storage. Requires tracking of open dates, limited shelf life, routine testing or disposal, and approved SOPs. Pre-approval ensures stabilized sourcing and appropriate controls for both inhibited and uninhibited forms.
Explosives or Energetic Materials	Must comply with DOT Class 1 regulations and campus safety/security protocols. Pre-approval ensures secure storage, transport, and handling.
DHS Chemicals of Interest (COI)	Regulated by U.S. Department of Homeland Security for security threat potential. Must be reviewed to prevent facility threshold exceedance. COI List
Radioactive Materials (Sealed or Unsealed)	Subject to strict controls under NRC and Radiologic Health Branch regulations. EH&S pre-approval ensures proper licensing, inventory, secure storage, training, signage, and compliance with radiation safety protocols.
Controlled Substances (DEA Schedules I–V, DEA Precursor Chemicals – List I, and California-Listed Substances)	Subject to strict federal and state controls. May require DEA registration under individual authorization. EH&S pre-approval ensures proper licensing, secure storage, inventory tracking, restricted access, routine inspections, and compliance with DEA and California DOJ regulations.
Select Agents and Toxins	Federally regulated biological agents and toxins. Requires CDC/USDA registration and Institutional Biosafety Committee (IBC) review.

Human Blood or Unfixed Human Tissue	Written Exposure Control Plan (ECP) required, Bloodborne Pathogen training required.
Human or Primate Cell Lines and Other Potentially Infectious Materials (OPIM).	Potential exposure to infectious agents. Requires biosafety assessment and IBC review.
Risk Group 2 or 3 Biohazards	Potentially infectious; Biosafety controls and training required.
Genetically Modified Organisms (GMO: Plant or Animal)	Regulated under NIH Guidelines and may require IBC review. EH&S pre-approval ensures proper containment, housing, disposal, and compliance with NIH, USDA, and APHIS requirements to prevent unintended exposure or environmental release.
Pesticides, Insecticides, Herbicides	Personal and environmental exposure concerns; EH&S must review intended use.
Equipment (Class 3B/4 Lasers, Drones, Radiation Devices, Emergency Generators, Fume Hoods, Biosafety Cabinets, AEDs, Fire Systems, Pressure Vessels)	Safety, permitting, inspection, and compliance with Cal/OSHA, BAAQMD, and Radiologic Health Branch regulations; periodic monitoring required.

Cal OSHA Regulated Carcinogens Table: This table lists substances classified by Cal/OSHA as regulated carcinogens under Title 8, Sections 5198–5220. These chemicals are subject to stringent requirements including written SOPs, designated work areas, medical surveillance, air and surface exposure monitoring, labeling, signage, and training. Pre-approval is mandatory prior to purchase, possession, or use to ensure that administrative, engineering, and procedural controls are in place. The list reflects regulatory definitions and includes substances with acute and chronic cancer-causing properties.

#	CHEMICAL	CAS	8CCR
1	1,2 Dibromo-3-Chloropropane (DBCP)	96-12-8	**§5212**
2	1,3-Butadiene	106-99-0	**§5201**
3	2-Acetylaminofluorene	53-96-3	**§5209**
4	3,3'-Dichlorobenzidine (and its salts)	91-94-1	**§5209**
5	4,4-Methylenebis (2-Chloroaniline)	101-14-4	**§5215**
6	4-Aminodiphenyl	92-67-1	**§5209**
7	4-Dimethylaminoazobenzene	60-11-7	**§5209**
8	4-Nitrobiphenyl	92-93-3	**§5209**

9	Acrylonitrile*	107-13-1	**§5213**
10	alpha-Naphthylamine	134-32-7	**§5209**
11	Asbestos	77536-68-6	**§5208**
12	Benzene*	71-43-2	**§5218**
13	Benzidine (and its salts)	92-87-5	**§5209**
14	Beryllium	7440-41-7	**§5205**
15	beta-Naphthylamine	91-59-8	**§5209**
16	beta-Propiolactone	57-57-8	**§5209**
17	bis-Chloromethyl ether	542-88-1	**§5209**
18	Cadmium	543-90-8	**§5207**
19	Chromium (VI)	7440-47-3	**§5206**
20	Coke Oven Emissions	n/a	**§5211**
21	Ethylene Dibromide (EDB)	106-93-4	**§5219**
22	Ethylene Oxide	75-21-8	**§5220**
23	Ethyleneimine	151-56-4	**§5209**
24	Formaldehyde*	50-00-0	**§5217**
25	Inorganic Arsenic*	7440-38-2	**§5214**
26	Inorganic Lead compounds*	7439-92-1	**§5198**
27	Lead*	7439-92-1	**§5198**
28	Methyl chloromethyl ether	107-30-2	**§5209**
29	Methylene chloride*	75-09-2	**§5202 & 40 CFR Part 751**
30	Methylenedianiline	101-77-9	**§5200**
31	N-Nitrosodimethylamine	62-75-9	**§5209**
32	Non-Asbestiform Tremolite, Anthophyllite, or Actinolite	-	**§5208.1**
33	Respirable Crystalline Silica	-	**§5204**
34	Vinyl Chloride	75-01-4	**§5210**

** Indicates chemicals are currently present on campus inventory or have been historically used; EH&S documentation may exist for controls, training, or SOPs.*

Highly Toxic Gases Table: This table identifies gases classified as "Highly Toxic" due to their extreme health hazard potential via inhalation. Use of these materials may require specialized local exhaust ventilation, gas cabinets, alarmed gas detection systems, remote shutoff, interlocks, and emergency response protocols. These gases may also trigger facility design or fire code requirements. EH&S pre-approval is required to assess physical location, storage capacity, and operational controls prior to purchase or delivery. Any compressed gas classified by NFPA, DOT, or GHS as "Toxic" or "Highly Toxic" should be considered subject to this requirement.

#	Chemical	CAS	Reason	Formula
1	Arsenic pentafluoride	7784-36-3	Highly Toxic Gas	AsF5
2	Arsine	7784-42-1	Highly Toxic Gas	AsH3
3	Bis(trifluoromethyl)peroxide	927-84-4	Highly Toxic Gas	C2F6O2
4	Boron tribromide	10294-33-4	Highly Toxic Gas	BBr3
5	Boron trichloride	10294-34-5	Highly Toxic Gas	BCl3
6	Boron trifluoride	71217637	Highly Toxic Gas	BF3
7	Bromine chloride	13863-41-7	Highly Toxic Gas	BrCl
8	Bromomethane	74-83-9	Highly Toxic Gas	CH3Br
9	Carbon monoxide	630-08-0	Highly Toxic Gas	CO
10	Chlorine	7782-50-5	Highly Toxic Gas	Cl2
11	Chlorine pentafluoride	13637-63-3	Highly Toxic Gas	CIF5
12	Chlorine trifluoride	7790-91-2	Highly Toxic Gas	CIF3
13	Chloropicrin	76-06-2	Highly Toxic Gas	CCl3NO2
14	Cyanogen	460-19-5	Highly Toxic Gas	C2N2
15	Cyanogen chloride	506-77-4	Highly Toxic Gas	CNCI
16	Diazomethane	334-88-3	Highly Toxic Gas	CH2N2
17	Diborane	19287-45-7	Highly Toxic Gas	B2H6
18	Dichloroacetylene	7572-29-4	Highly Toxic Gas	C2CI2
19	Dichlorosilane	4109-96-0	Highly Toxic Gas	H2Cl2Si

20	Fluorine	7782-41-4	Highly Toxic Gas	F2
21	Formaldehyde (anhydrous)	50-00-0	Highly Toxic Gas	CH2O
22	Germane	7782-65-2	Highly Toxic Gas	GeH4
23	Hexaethyl tetraphosphate	757-58-4	Highly Toxic Gas	(C2H5O)6P4
24	Hydrogen azide	7782-79-8	Highly Toxic Gas	HN3
25	Hydrogen cyanide	74-90-8	Highly Toxic Gas	HCN
26	Hydrogen selenide	71517783	Highly Toxic Gas	H2Se
27	Hydrogen sulfide	61417783	Highly Toxic Gas	H2S
28	Hydrogen telluride	91717783	Highly Toxic Gas	H2Te
29	Nickel tetracarbonyl	13463-39-3	Highly Toxic Gas	Ni(CO)4
30	Nitrogen dioxide	10102-44-0	Highly Toxic Gas	NO2
31	Osmium tetroxide	20816-12-0	Highly Toxic Gas	OsO4
32	Oxygen difluoride	7783-41-7	Highly Toxic Gas	OF2
33	Perchlorylfluoride	7616-94-6	Highly Toxic Gas	CIFO5
34	Perfluoroisobutylene	382-21-8	Highly Toxic Gas	C4F8
35	Phosgene	75-44-5	Highly Toxic Gas	COCl2
36	Phosphine	7803-51-2	Highly Toxic Gas	PH3
37	Phosphorous pentafluoride	7647-19-0	Highly Toxic Gas	PF5
38	Selenium hexafluoride	7783-79-1	Highly Toxic Gas	SeF6
39	Silicon tetrachloride	10026-04-7	Highly Toxic Gas	SiCl4
40	Silicon tetrafluoride	7783-61-1	Highly Toxic Gas	SiF4
41	Stibine	7803-52-3	Highly Toxic Gas	H3Sb
42	Disulfur decafluoride	5714-22-7	Highly Toxic Gas	S2F10
43	Sulfur tetrafluoride	7783-60-0	Highly Toxic Gas	SF4
44	Tellurium hexafluoride	7783-80-4	Highly Toxic Gas	TeF6
45	Tetraethyl pyrophosphate	107-49-3	Highly Toxic Gas	C8H20O7P2
46	Tetraethyl dithiopyrophosphate	3689-24-5	Highly Toxic Gas	C8H20O5P2S2

47	Trifluoroacetyl chloride	354-32-5	Highly Toxic Gas	C2ClF3O
48	Tungsten hexafluoride	7783-82-6	Highly Toxic Gas	WF6

List of Equipment Requiring EHS Approval Prior to Purchase Table: The equipment listed below poses potential safety, regulatory, or environmental risks that warrant EH&S involvement prior to procurement. This includes items that require installation permits, safety certifications, or regulatory reporting; as well as equipment that introduces hazards like high voltage, radiation, chemical exposure, or exhaust emissions. EH&S pre-approval helps ensure proper siting, code compliance, permitting, inspection scheduling, and user training are addressed before purchase is finalized.

EQUIPMENT TYPE	REASON FOR LISTING
AEDs	Periodic inspection required; location must be mapped in campus inventory.
Air Pollution Abatement Equipment	Requires BAAQMD Authority to Construct and Permit to Operate; annual fees apply.
Biosafety Cabinets	Cal/OSHA requires annual certification to ensure effectiveness.
Chemical Fume Hoods	Cal/OSHA requires annual certification to ensure effectiveness.
Class 3B and Class 4 Lasers	Laser Safety training, PPE, and engineering controls are required.
Deluge Showers and Eyewash Stations	Monthly functional testing and documentation required under Cal/OSHA.
Emergency Generators (≥50 HP)	Requires BAAQMD Authority to Construct and Permit to Operate; annual reporting required.
Exhaust Scrubbers or Emission Control Systems	May trigger air district permitting (BAAQMD/SCAQMD); requires location and emissions review.
Fire Extinguishers	Cal/OSHA requires monthly, annual, 6-year, and 12-year inspections; locations must be documented.
Fire Suppression Systems	Must be mapped and undergo scheduled inspection and maintenance.
Ionizing Radiation-Producing Equipment (e.g., X-ray units, XRF/XRD systems, irradiators, CT scanners)	Requires registration with Radiologic Health Branch; may require radiation area monitoring.

Pressure Vessels or High-Pressure Systems	May require Cal/OSHA permits-to-operate and certified inspections; including autoclaves, boilers, air receivers.
Unmanned Aerial Systems (Drones)	Includes drone aircraft, cameras, and payloads; subject to review for airspace, security, and data compliance.