Determining if the Use of an Acutely Toxic or Physically Dangerous Chemical Requires Protocol Submission to the UTHSC-H Chemical Safety Committee (CSC)

A carcinogen is a substance that meets one of the following criteria:
(a) It is listed under Group 1 ("carcinogenic to humans") or Group 2A ("probably carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) or
(b) It is listed under the category, "Known to be Human Carcinogens" in the Annual Report on Carcinogens published by the National Toxicology Program (NTP)

Identify chemical of interest

Is the chemical a carcinogen?

YES

CSC Protocol Submission and Full Review

NO

Is the chemical on the list, but conditionally exempted?

YES

Acknowledge Safety Sheet, educate workforce, and conduct work in adherence to Chemical Hygiene Plan

NO

NO

Is the chemical found on the Mandatory Protocol Review List?

YES

Conditionally exempt chemicals are a subset of chemicals on the mandatory protocol review list that are so commonly used at UTHSC-H that the CSC has voted to conditionally exempt them from protocol submission and committee review. Instead, the users are provided with a summary safety sheet describing the agent's toxic or hazardous characteristics and the protective measures to be taken. The PI is asked to acknowledge that they have read and understand the information on the safety sheet and will train their workers accordingly.

Mandatory protocol review list is a list of chemicals that exhibit acutely toxic and or physically dangerous characteristics. Mandatory Protocol Review List

NO

Acknowledge Safety Sheet, educate workforce, and conduct work in adherence to Chemical Hygiene Plan

Identify chemical of interest
Chemical agents that are classified as highly toxic are substances which have a high degree of acute toxicity. OSHA (29 CFR 1910.1200). Such agents meet the following criteria:
(a) Chemical has a median lethal dose (LD\(_{50}\)) of 50 milligrams or less when administered orally to rats [LD\(_{50}\) < 50 mg/kg]; or
(b) Chemical has a median lethal dose (LD\(_{50}\)) of 200 milligrams or less when administered by continuous dermal contact for 24 hours (or less if death occurs within 24 hours) to the skin of rabbits [LD\(_{50}\) < 200 mg/kg]; or
(c) Chemical has a median lethal concentration (LC\(_{50}\)) in air of 200 parts per million by volume when administered by continuous inhalation for one hour (or less if death occurs within one hour) to rats [LC\(_{50}\) < 200 ppm]

Nanomaterial is classified as material that has been purposefully manufactured, synthesized, or manipulated to have a size with at least one dimension in the range of approximately 1 to 100 nanometers and exhibit unique properties determined by their size as defined by the Occupational Health and Safety Administration (OSHA)

An explosive is defined as “any chemical compound, mixture, or device which is designed to function by explosion that is substantially instantaneous with the release of gas and heat” by the U.S. Department of Transportation. Explosives are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives, ATF (27 CFR 555.25). Such agents meet the following criteria:
(a) Contain chemical functional groups that are known to be explosive
(b) Involves incompatibles that could potentially lead to the formation of chemical functional groups known to be explosive
(c) Involves a pure substance or mixture containing peroxides, peroxide formers, or other strong oxidizers
Is the chemical a pyrophoric?

A pyrophoric substance is "a chemical which, even in small quantities, is liable to ignite within five minutes after coming into contact with air" as defined by OSHA (29 CFR 1910.1200).

Is the chemical a poison gas?

A poison gas is defined as gases that are known to be poisonous by inhalation listed under Class 2.3 of US Department of Transportation Hazardous Materials Table, DOT (49 CFR 173.115).

Is the chemical an antineoplastic?

Antineoplastic agents are chemotherapeutic agents that control or kill cancer cells, as defined by The National Institute for Occupational Safety and Health (NIOSH).

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A pesticide is defined as "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest" by the Federal Insecticide, Fungicide, and Rodenticide Act. The U.S. Environmental Protection Agency oversees the regulation of pesticides. [EPA (40 CFR 152.3)]

Select agent toxins are biological agent toxins that have the potential to pose a severe threat to public health and safety. The U.S. Centers for Disease Control and Prevention (CDC) and U.S. Department of Agriculture (USDA) oversee the National Select Agent Registry program [42 CFR 73].

Is the chemical a pesticide?

Is the chemical a select agent toxin?

No CSC review required. Conduct work in adherence to Chemical Hygiene Plan.