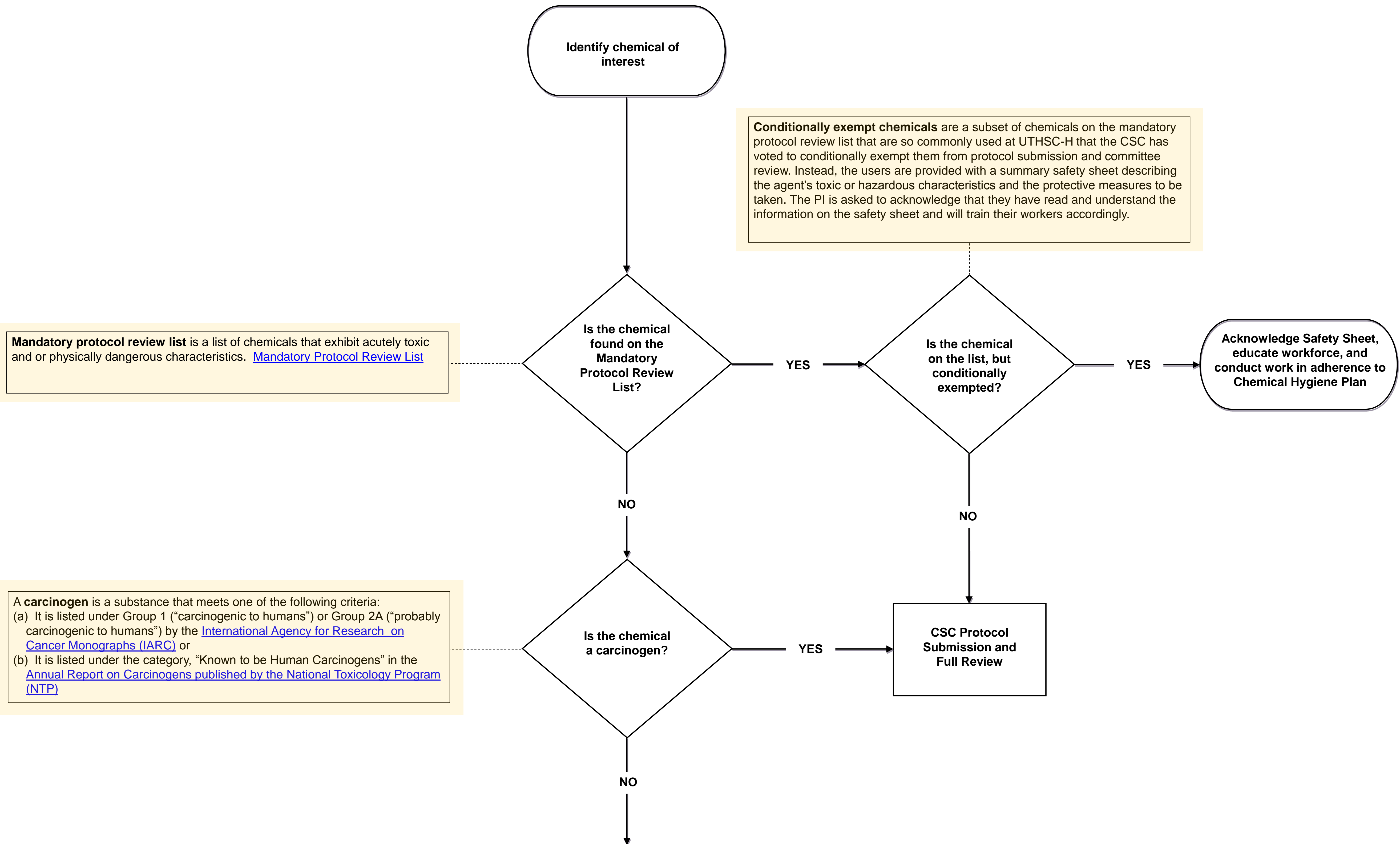


# Determining if the Use of an Acutely Toxic or Physically Dangerous Chemical Requires Protocol Submission to the UTHSC-H Chemical Safety Committee (CSC)



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<sub>50</sub>) of 50 milligrams or less when administered orally to rats [**LD<sub>50</sub> < 50 mg/kg**]; or  
(b) Chemical has a median lethal dose (LD<sub>50</sub>) 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<sub>50</sub> < 200 mg/kg**]; or  
(c) Chemical has a median lethal concentration (LC<sub>50</sub>) 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<sub>50</sub> < 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 \(27 CFR 555.23\)](#)  
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

NO

Is the chemical highly toxic?

YES

CSC Protocol Submission and Full Review

NO

Is the chemical nanomaterial?

YES

CSC Protocol Submission and Full Review

NO

Is the chemical an explosive?

YES

CSC Protocol Submission and Full Review

NO

NO



Is the chemical  
a pyrophoric?

YES

CSC Protocol  
Submission and  
Full Review

NO



Is the chemical  
a poison gas?

YES

CSC Protocol  
Submission and  
Full Review

NO



Is the chemical  
an  
antineoplastic?

YES

CSC Protocol  
Submission and  
Full Review

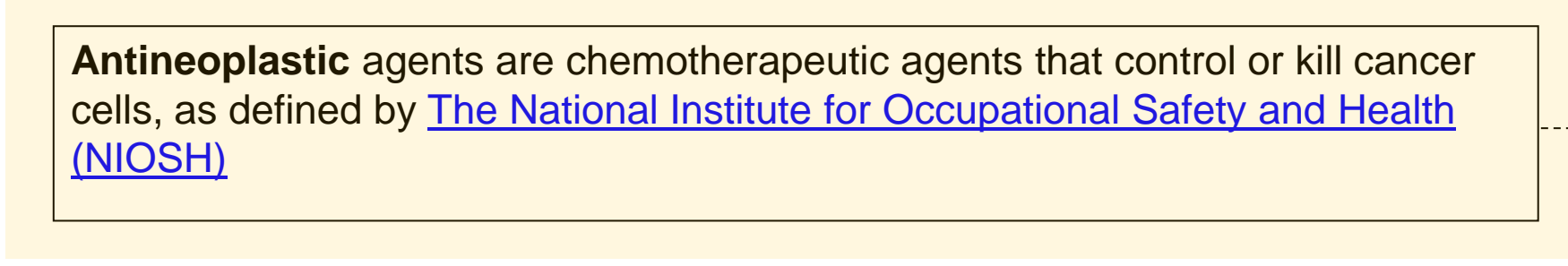
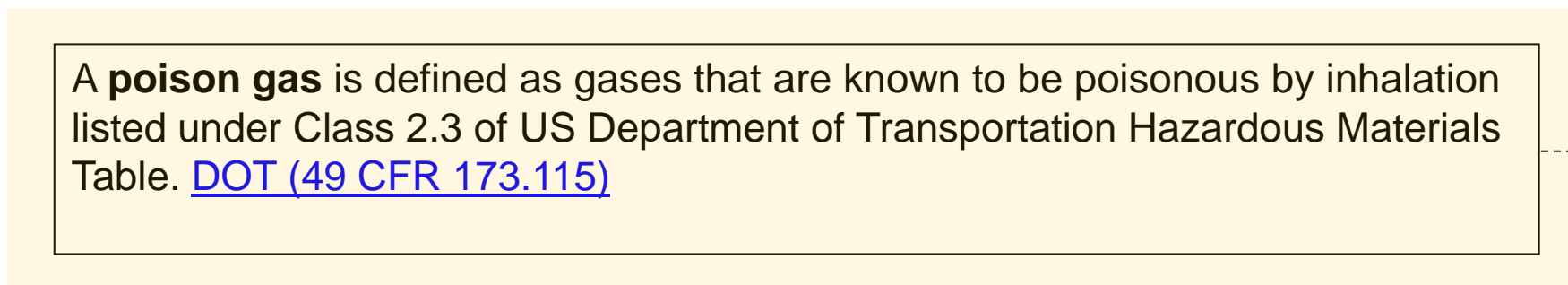
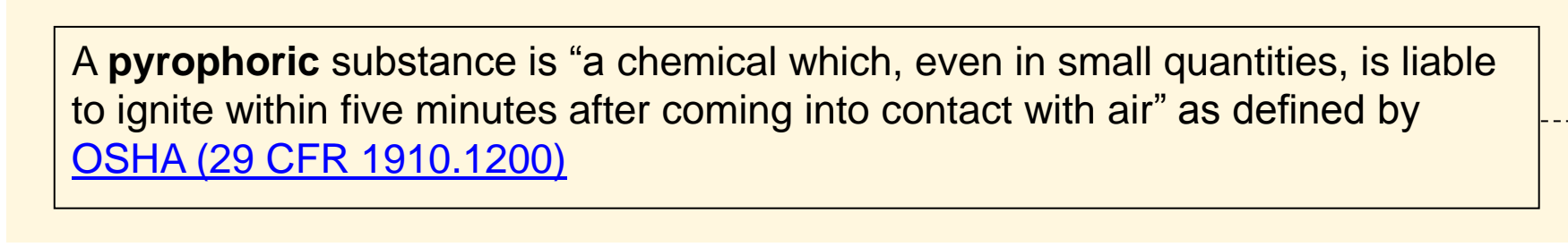
NO



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 \(29 CFR 1910.1200\)](#)

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 \(49 CFR 173.115\)](#)

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



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 \(42 CFR 73\)](#)

