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# Appendix Q:

## Glossary

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<b>Accident</b>	An unforeseen happening resulting in damage to people or property.
<b>Accuracy</b>	The ability of a measurement to match the actual value of the quantity being measured; correctness.
<b>Acid</b>	Compounds that readily donate a proton (hydrogen) to a chemical reaction. Substances with a $\text{pH} < 7$ .
<b>Acute effects</b>	Effects of exposure to chemical hazards in high concentrations for a short duration.
<b>Adulterant</b>	A substance used to increase the mass of a controlled substance. These substances produce a physiological effect on the body and are used to give the illusion that there is more controlled substance present than is actually there.
<b>Alkaloid</b>	A class of substances readily formed in the tissues of plants and the bodies of animals, e.g., morphine and codeine are alkaloids of opium.
<b>Anion</b>	A negatively charged group of atoms. e.g., $\text{OH}^-$ .
<b>Aqueous</b>	Made from, or by means of, water.
<b>Associative evidence</b>	Evidence that establishes a relationship between two items.
<b>Base</b>	Compounds that readily accept a proton (hydrogen) in a chemical reaction.
<b>Beyond a reasonable doubt</b>	The proof of guilt required for conviction of a criminal defendant. A reasonable doubt exists when a fact finder cannot say with moral certainty that a person is guilty, or a particular fact exists. It must be more than an imaginary doubt, and it is often defined judicially as such doubt that would cause a reasonable person to hesitate before acting in a matter of importance.
<b>Birefringence</b>	The resolution or splitting of a light wave into two unequally reflected or transmitted waves by an optically anisotropic medium such as calcite or quartz. Also called double refraction.

<b>BLEVE</b>	Boiling Liquid Expanding Vapor Explosion — A type of mechanical explosion in which the pressure from the expanding vapors of a boiling liquid compromise the structural integrity of the container of a closed system.
<b>Boiling plateau</b>	The temperature a mixture of boiling liquids maintains until an individual component has evaporated.
<b>Boiling point</b>	The temperature at which a liquid changes into a vapor.
<b>Burden of proof</b>	The responsibility of proving a disputed charge or allegation.
<b>Carcinogen</b>	A chemical agent capable of causing the development of cancerous cells.
<b>Cation</b>	A positively charged group of atoms. e.g., $\text{NH}_4^+$ .
<b>Chronic effects</b>	Effects of exposure to chemical hazards in low concentrations for a long duration or extended period of time.
<b>Class characteristic</b>	A feature of an item that is unique to a group of items.
<b>Combustible liquid</b>	A compound with a flash point above 100°C.
<b>Compatible chemicals</b>	Chemicals that can remain in close or permanent contact without reacting.
<b>Confined space</b>	A space with limited entry or exit openings and unfavorable ventilation that is not intended for continuous occupancy.
<b>Confirmatory test</b>	A documentable examination that provides data considered specific to the compound under examination.
<b>Controlled substance</b>	Any substance, commonly drugs, that when possessed or used is regulated.
<b>Conversion process</b>	Changing a raw material into the finished product by making minor changes in the molecule or its salt form.
<b>Corrosive</b>	Chemicals that can cause visible damage to metals, plastics, or other materials (especially your skin).
<b>Deductive reasoning</b>	Using nonspecific details to infer a specific fact.
<b>Deflagration</b>	An explosion with a reaction rate of less than 1000 m/sec.
<b>Depressant</b>	A drug that reduces excitability and calms a person.
<b>Detonation</b>	An explosion with a reaction rate of greater than 1000 m/sec.
<b>Diluent</b>	An inert substance used to increase the mass of the controlled substance. These substances have no physiological effect on the body and are used to give the illusion that there is more controlled substance present than actually is present.
<b>Distillation</b>	The separation of a liquid from a solid or other liquid using evaporation followed by condensation.
<b>Drug</b>	A substance other than food that is intended to affect the structure or function of the body.
<b>Embryonic toxin</b>	A chemical agent that can cause fetal death.
<b>Explosion</b>	A rapid chemical change that produces a large amount of heat and gas.
<b>Explosive chemicals</b>	Compounds that undergo a rapid chemical change that releases a large amount of heat and gas.
<b>Explosives (27 CFR 55.11)</b>	Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion.
<b>Extraction</b>	The act of separating a constituent from the whole.
<b>Extraction process</b>	Removes raw material from a mixture without chemically changing the material being extracted.

<b>Flammable Flash point</b>	A compound with a flash point below 100°F. The lowest temperature at which a source of ignition will ignite the vapors above a flammable liquid.
<b>Fourier transform</b>	A technique for expressing a waveform as a weighted sum of sines and cosines.
<b>Explosive/flammable limits</b>	The atmosphere's fuel and air mixture range that will support combustion. The flammable range refers to an unconfined atmosphere. The explosive range refers to a confined atmosphere.
<b>Fireworks (27 CFR 55.11)</b>	Any composition or device designed to produce a visual or an audible effect by combustion, deflagration, or detonation and that meets the definition of "consumer fireworks" or "display fireworks."
<b>Gas chromatography</b>	The use of gas flowing through a coated tube to separate compounds by their sizes, weights, and chemical reactivities with the column coating.
<b>Gravimetric quantitation</b>	Using the ratio of pre- and postextraction weights to determine concentration.
<b>Hallucinogen</b>	A psychoactive drug that induces hallucinations or alters sensory experiences.
<b>Hydrogenation</b>	A chemical reaction that adds hydrogen to a substance through the direct use of gaseous hydrogen.
<b>IDLH</b>	Immediately Dangerous to Life or Health
<b>Incompatible chemicals</b>	Chemicals that when combined generate heat and cause a fire or explosion, form a toxic gas or vapor, form a substance that is more toxic than the original compounds, disperse a toxic mist or dust, produce a violent chemical reaction, or produce any combination thereof.
<b>Individual characteristic</b>	A feature that is unique to a specific item.
<b>Inductive reasoning</b>	Using specific facts to infer a general conclusion.
<b>Infrared spectroscopy</b>	The use of the absorption of infrared radiation to produce a chemical fingerprint of a substance.
<b>LD50</b>	The concentration at which a substance will be lethal to 50% of the test population. It is usually expressed as weight of substance per weight of test subject (e.g., 5 mg/kg rat).
<b>Lower explosive/flammable limit</b>	The minimum atmospheric concentration of a substance that will explode (confined space) or ignite (unconfined space). Concentrations below this level are said to be fuel poor and will not explode or ignite.
<b>Macroscopic examination</b>	Visual examination, generally performed with the unaided eye, used to identify class characteristics.
<b>Manufacture (21 CFR 1300.01)</b>	"... the producing, preparing, propagating, compounding or processing of a drug or other substance or the packaging or repackaging of such substance or labeling or relabeling of the commercial container of such..."
<b>Manufacturer (27 CFR 55.11)</b>	Any person engaged in the manufacturing of explosive materials for purposes of sale or distribution or for his own use.
<b>Mass spectroscopy</b>	The use of molecular fragment (ion) patterns to produce a chemical fingerprint of a substance.

<b>Melting point</b>	The temperature at which a solid changes into a liquid.
<b>Microscopic examination</b>	Visual examination, performed utilizing some type of magnification, used to identify individual characteristics.
<b>Mutagen</b>	A chemical agent that can cause mutations at a greater frequency than normally expected. The mutation can be a result of alteration of the genetic code. Many mutagens are carcinogens.
<b>Narcotic</b>	An addictive substance that reduces pain, alters mood and behavior, and usually induces sleep or stupor.
<b>Organic</b>	The class of chemical compounds having a carbon basis; hydrocarbons are organic compounds.
<b>Oxidizer</b>	Compounds that provide oxygen to a reaction.
<b>PEL</b>	Permissible Exposure Limit.
<b>Poison</b>	A substance that in low concentrations will cause death or injury upon ingestion.
<b>Polymorphism</b>	Crystallization of a compound in at least two distinct forms.
<b>Precision</b>	The ability to achieve the same result; reproducibility.
<b>Precursor chemical</b>	A raw material that becomes a part of the finished product.
<b>Preponderance of evidence</b>	The least demanding standard of proof and is used for most civil actions and some criminal defenses (as insanity). Clear and convincing proof is a more demanding standard of proof and is used in certain civil actions (as a civil fraud suit). Proof beyond a reasonable doubt is the most demanding standard and the one that must be met for a criminal conviction.
<b>Pyrophoric</b>	Chemicals that react with the air and may spontaneously ignite.
<b>Pyrotechnic compositions (27 CFR 55.11)</b>	A chemical mixture, that upon burning and without explosion, produces visible brilliant displays, bright lights, or sounds.
<b>Qualitative analysis</b>	Analytical technique used to determine the composition of a substance or mixture.
<b>Quantitative analysis</b>	Analytical technique used to determine the concentration of one or more of the components of a mixture.
<b>Racemic mixture</b>	A combination of the different types of stereoisomers of the same compound.
<b>Reagent chemical</b>	A chemical that reacts with one or more of the precursor chemicals but does not become part of the finished product.
<b>Reducer</b>	A compound that can remove oxygen from or add hydrogen to a compound.
<b>Reflux</b>	A controlled boiling process in which the evaporated liquid is condensed and returned to the reaction mixture.
<b>Relative retention time</b>	The ratio of the retention time of the substance of interest divided by the retention time of an internal standard run on the same instrument at the same time.
<b>Retention time</b>	The time required for a substance to travel from the injection port to the detector.
<b>Screening (preliminary) test</b>	An examination that provides information concerning the class characteristics of the substance under examination.
<b>Solvent</b>	A chemical that is used to dissolve solid precursors or reagents, to dilute reaction mixtures, and to separate or purify other chemicals. They do not react with precursor or reagent chemicals.

<b>Stereoisomers</b>	Compounds with identical structural formulas with differences that are in the way the molecule is arranged in space.
<b>Stimulant</b>	A drug that produces a temporary increase of the functional activity or efficiency of an organism or any of its parts.
<b>Structural isomers</b>	Compounds that contain the same number and type of atoms but differ in the order in which the atoms are arranged. The types of structural isomers include chain, positional, and functional groups.
<b>Synthesis process</b>	A chemical reaction or series of chemical reactions in which molecules or parts of molecules are combined to create a new molecule.
<b>Tableting process</b>	The act of placing the finished product into dosage forms or into smaller salable units for distribution.
<b>Teratogen</b>	A chemical agent that produces a system malfunction, generally in the form of nonlethal mutations or tumors.
<b>Thin-layer chromatography</b>	The use of a solvent traveling through a porous medium to separate compounds by their chemical reactivity with the solvent.
<b>TLV</b>	Threshold Limit Value — .
<b>Ultraviolet spectroscopy</b>	The use of the absorption of ultraviolet radiation to classify a substance.
<b>Upper explosive/flammable limit</b>	The maximum atmospheric concentration of a substance that will explode (confined space) or ignite (unconfined space). Concentrations above this level are said to be fuel rich and will not explode or ignite.
<b>Vapor density</b>	The ratio of the density of a gas or vapor to the density of ambient air.
<b>Water reactive</b>	Chemicals that hydrolyze with water forming flammable, corrosive, or toxic products.