Marijuana Production & Usage - Helpful Definitions:

Industrial Hemp: "A plant of the genus Cannabis and any part of the plant, whether growing or not, containing a Delta-9 Tetrahydrocannabinol (THC) concentration of no more than three-tenths of one percent (0.3%) on a dry weight basis." - Colorado Revised Statutes (C.R.S.), §35-61-101(7).

According to 21 U.S.C. § Title 21. Section 802 Subchapter I Control and Enforcement, Part A – Introductory Provisions; Definitions (16):

Marijuana means: "All parts of the plant Cannabis Sativa L, whether growing or not; the seeds thereof, the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seed or resin. Such term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination."

Extraction Types for Marijuana:

Solventless Extractions: Dry Sieve/Sift, Dry Ice, Cold/Hot Water Extraction, Heat Press

Non-Hydrocarbon Solvent Extraction: Ethyl Alcohol/Ethanol, Isopropyl Alcohol/Isopropanol, Acetone, Supercritical/Subcritical CO_2

Hydrocarbon Solvent Extractions: Butane, Propane, Pentane, Heptane

Ice Water Extraction: Bubble Hash

Extraction Types for Industrial Hemp: Hydrocarbon Solvent Extraction using Hexane

Issues relating to Processing / Extraction Facilities:

Cold Burns/Frost Bite; High Pressure Operations; Gas Leaks; Electrical Hazards; Oxygen-Deficient Environments; Fire Hazards; Insufficient Airflow; Inadequate Fire Suppression; No Hazardous Vapor Exhaust (Chemical Hood); Extra Security Concerns; Hazardous Chemical and Pesticide Exposures; Blocked Means of Egress; Weapons, Other Drugs (if an illegal operation)

HAZARDS to Humans:

Inhalation

Flower, Concentrates, E-Liquids, Vape Pens & Cartridges, Inhalers

Absorption

Personal Care Items: Feminine Care Products, Massage Oils, Personal Lubricants

Personal Hygiene Products: Hand & Body Soaps, Bath Bombs, Shampoo & Conditioner, Oral Care, Suppositories, Eye Drops, Cosmetics, Topical Creams, Transdermal patches, Sunscreens

Ingestion: Oral

Candies, Gummies, Mints, Gum, Oils & Butters, Protein Powder, Water Soluble powder & liquids, Condiments, Honey, Donuts

Beverages: Coffee, Tea, Adult Beverages, Smoothies, Add Ins

CO_2 Enrichment for Indoor Cultivation Operations: When using **CO_2 Enrichment**, there is a need for sensors, alarms, placards and signage

Growers most often use a generator of compressed CO_2 to elevate CO_2 levels to make plants grow faster

Typical range is 1,500 PPM or less of CO_2 in grow rooms

OSHA Permissible Exposure Limit (PEL) is 8-Hour Time-Weighted Average (TWA) for human occupancy is 5,000 PPM

40,000 PPM CO_2 is the Immediately Dangerous to Life and Health Concentration (IDLH) by the National Institute for Occupational Safety and Health (NIOSH)

CO_2 alarms are required and set to alarm at 5,000 PPM

Grow Lights for Different Stages of Growth

For Clones and Mothers (24 hours): Fluorescent Tubes, Compact Fluorescent Bulbs, LED lights

For Vegetative Stage (18 hours): High Intensity Discharge Lights: Metal Halide, LED lights

For Flowering Stage (12 hours): High Intensity Discharge Lights: High Pressure Sodium or Metal Halide, LED lights