Toolbox Talk Training: Hazardous Substance Awareness – Benzene

Benzene is a flammable liquid. OSHA identifies it as a component of coal- and petroleum-derived products, including gasoline and other fuels, and as a chemical used to manufacture plastics, detergents, pesticides, and other chemicals. Its presence and concentration in a particular product must be checked from the product information, not assumed from its name or use.

Read the product label and Safety Data Sheet and follow the employer's chemical-specific training and procedures. OSHA's benzene standard, 1910.1028, applies to construction through 1926.1128, but paragraph (a) contains exclusions. For example, many fuel operations after final discharge from bulk wholesale storage are excluded, with an exception for specified indoor dispensing; other exclusions also apply. This does not mean benzene-containing fuels are harmless or that other applicable safety requirements disappear.

NIOSH lists inhalation, skin absorption, ingestion, and skin or eye contact as benzene exposure routes. Its Pocket Guide lists dizziness, headache, irritation, and bone-marrow depression among the symptoms, and identifies blood, the central nervous system, and bone marrow among the target organs. OSHA states that short-term high exposures can cause drowsiness, dizziness, unconsciousness, and death; long-term exposure may affect bone marrow and blood production. Benzene is associated with leukemia. Avoid skin and eye contact as directed by the product information and employer's protections.

For operations covered by 1910.1028, paragraph (f) specifies engineering and work-practice controls, with the exceptions and respiratory-protection provisions stated in that standard. Paragraph (g) governs required respirator use and programs. Under paragraph (h), appropriate protective clothing and equipment must prevent eye contact and limit dermal exposure to liquid benzene. NIOSH recommends washing contaminated skin and removing wet, flammable clothing. Follow the employer's emergency procedures; this discussion is not a spill-cleanup or confined-space entry procedure.

For workplaces and operations covered by OSHA's benzene standard, 1910.1028(e) requires exposure monitoring, including representative breathing-zone air samples for the applicable time-weighted average and short-term exposure determinations. The requirements apply to construction through 1926.1128, subject to the standard's scope and exclusions. Use the employer's exposure assessment and the protections required for the task; a warning label or simply being near a material does not establish whether exposure limits are met.

If you have any questions or concerns regarding benzene hazards or exposure, contact your supervisor, safety manager, or another designated workplace representative. Thank you for participating in today’s toolbox talk, and please remember to sign the sign-in form to receive attendance credit.

General safety information only. This material does not replace required training, a site-specific hazard assessment, or professional safety advice. Before using it, verify current requirements with OSHA (osha.gov) and your employer. Follow applicable regulations, equipment manufacturers’ instructions, and your employer’s safety procedures.

Sources: OSHA benzene overview: osha.gov/benzene; 1910.1028(a),(e),(f),(g),(h); 1926.1128; NIOSH Pocket Guide: Benzene, cdc.gov/niosh/npg/npgd0049.html; 1910.1200(h).

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TOOLBOX TALK TRAINING SIGN-IN FORM

Topic discussed: Hazardous Substance Awareness - Benzene

Company Name:_____ Date:_____

Discussion led by:_____

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Signatures record attendance only, not certification or completion of required training.

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