

"For safety's sake—do something."

Chemical Safety: Routes of Exposure

Chemicals exist on virtually every worksite. It is important to know and understand the routes of entry into the human body. In this safety message, we look at the four routes of exposure, and safe work practices around chemicals.

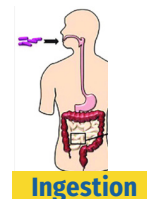
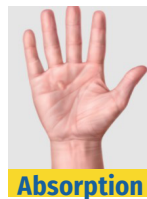
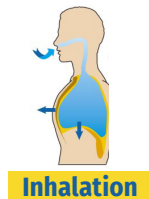
Four Routes of Entry

Inhalation: Inhalation is the most common route of entry a person comes into contact with. Once inhaled, chemicals are either exhaled or deposited in the respiratory tract. Upon contact in the upper respiratory tract or lungs, chemicals may be absorbed into the bloodstream.

Absorption: The simplest way for chemicals to enter the body is through direct contact with the skin or eyes. Getting chemicals onto the skin, or in the eyes, can result in redness and irritation all the way to severe destruction of tissue or blindness. The eyes are especially sensitive to chemicals. Some chemicals have the ability to pass through the skin and get into the bloodstream of a victim.

Ingestion: The gastrointestinal tract is another possible route of entry for toxic substances. Although direct ingestion of a laboratory chemical is unlikely, exposure may occur as a result of ingesting contaminated food or beverages, touching the mouth with contaminated fingers, or swallowing inhaled particles that have been cleared from the respiratory system. The possibility of exposure by this route may be reduced by not eating, drinking, smoking, or storing food in the work areas, and by washing hands thoroughly after working with chemicals, even when gloves were worn.

Injection: Though not common, injection of chemicals into the body can occur. A sharp object can be contaminated with a chemical, or substance, and penetrate the skin. The chemical is then in the body and can make its way into the bloodstream where it can damage organs or other tissue. Pressurized liquids can also be injected into the body through injection.



Safe Work Practices When Working with Chemicals

- Know the chemicals you are working with. Read the Safety Data Sheet (SDS) to understand the safe handling procedures and know what to do if you come into contact with the chemical.
- Eliminate chemical hazards where possible. Substitute a less hazardous chemical in place of a more hazardous chemical, when you can.
- Engineer chemical hazards out of the workplace. Engineering controls include ventilation such as fans, barriers creating distance or a shield from chemicals, filters, etc.
- Wear the correct PPE to protect yourself from the chemical. PPE such as respirators, goggles, a face shield, chemical gloves, and a lab coat are some examples to create barriers between your body and a chemical.

**Safety Scott says,
"Safety always is
ALWAYS!"**