

CHAPTER OVERVIEW

Section 4: Interactions

Learning Objectives

After completing this lesson, you will be able to:

- Explain the impacts that can be experienced when two or more chemicals interact.
- List realistic examples of chemical interactions.

In this section...

Topics include:

4.1: Interactions

Did you know?

Gasoline is a volatile, complex mixture of hydrocarbon compounds. The mixture is easily vaporized during handling in normal conditions. People are exposed to this complex substance during refueling at service stations. [More information](#) is available on consumer exposure to gasoline.

In this section, we will look into the effects of interactions among such chemicals.

Closeup photo of a gasoline nozzle inserted into the fuel tank of a car

Figure 1. Refueling car

(Image Source: iStock Photos, ©)

What We've Covered

In this section, we explored the following key points:

- Interactions between multiple chemicals can:
 - Decrease toxicity (antagonism).
 - Add to toxicity (additivity).
 - Increase toxicity (synergism or potentiation).
- Interactions can occur by simultaneous exposure or if exposure to the agents is separated by time.
- People are normally exposed to many chemicals and combinations of chemicals every day.
- Emerging approaches in assessing interactions include:
 - Adverse outcome pathways (AOPs).
 - *In vitro* methods.
 - "Omics" techniques.
 - *In silico* approaches.

Coming Up...

In the next section, we will explore various methods for testing toxicity.

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