

## MODULE OVERVIEW

This module provides information on composition and health effects of dust and fumes. Students will identify the tasks that generate dusts and fumes in collision shops. Available engineering controls and work practices that assist with dust and fume elimination and reduction will be discussed and demonstrated. Personal protective equipment suitable for protection against dust and fumes is discussed. Respirator characteristics will be discussed. Emphasis is placed on proper selection, use and maintenance of respirators.

## OBJECTIVES

When students have completed this module, they will be able to:

- Identify tasks that generate exposure to dust and fumes.
- List the health effects associated with exposure to different types of dust and fumes.
- Explain the role of particle size in potential adverse health effects.
- Demonstrate use of equipment and work practices that eliminate or reduce exposure to dust and fumes. Demonstrate selection and use of ppe.
- Explain how respirators work and perform user seal checks.
- Identify the information that indicates the dust mask or respirator is NIOSH-certified.

## CLASSROOM (10 min + 15 min)

PowerPoint presentations:

**Dust and Fumes – Part 1 – Identification and Health Effects.pptx – 10 min**

**Dust and Fumes – Part 2 – Control and Protection.pptx – 15 min**

**ATTENTION:** Part 2, slides 12 and 14 contain video clips. Verify in advance that the video clips run on your computer. You can access the video clips separately:

Slide 12: <https://www.youtube.com/watch?v=Tzpz5fko-fg> (watch from 1.50 to 4.39)

Slide 14: <https://www.youtube.com/watch?v=Tzpz5fko-fg> (watch from 5.07 to 7.15)

Handouts:

**Dust and Fumes – Part 1 – Handout.pdf**

**Dust and Fumes – Part 2 – Handout.pdf**

Instructor Tool Kit: 2 or 3 respirators, including 1 or 2 types of 2-strap dust masks

Over →



## LAB (20 min)

**Dust and Fumes – Lab Activities.pdf** – Show students the equipment and work practices used to eliminate or reduce generation of dust and fumes. Show students where they can find PPE in the shop. Explain and demonstrate what makes an air gun OSHA – compliant. Demonstrate air pressure regulation when compressed air is permitted for use in cleaning surfaces.

## HOMEWORK

- **Dust and Fumes – Homework.pdf** – Students learn about the specific requirements for aluminum dust extractors. Students learn about the importance of NIOSH certification and watch a video about respirator fit testing methods. Students practice putting on and taking off their dust mask following manufacturer’s procedures.
- **Quiz**

## ADDITIONAL RESOURCES

**“I want to know more” folder** – information about dust and fume control options, respirators and dust masks, and welding hazards.

