

Conducting Chemical Risk Assessments to Ensure Worker Safety

Part 1: Dialogue

Characters: Lisa (Chemical Engineer), Mark (Safety Officer)

Lisa: Mark, we need to conduct a thorough **toxicology analysis** for the new solvents in production. Have you reviewed the latest reports?

Mark: Yes, I have. Some of the chemicals exceed the recommended **occupational exposure limit (OEL)**, so we need additional safety measures.

Lisa: That's concerning. We should update the **safety data sheet (SDS)** to reflect the new risks and necessary precautions.

Mark: Agreed. Also, workers handling these substances should use the correct **personal protective equipment (PPE)** to minimize exposure.

Lisa: Absolutely. But even with PPE, we should improve **fume hood ventilation** in the lab to reduce airborne contaminants.

Mark: That's a great idea. I'll check if our current system meets industry standards and suggest upgrades if needed.

Lisa: We should also conduct a training session on chemical safety, especially focusing on emergency response in case of spills.

Mark: Good point. If employees are well-informed, the risk of accidents will decrease significantly.

Lisa: Let's schedule a review next week and finalize our safety improvements.

Mark: Sounds good. I'll compile a report and share the findings with the team.

Part 2: Comprehension Questions

1. What issue does Mark mention about some chemicals?
 - (A) They are too expensive to use.
 - (B) They exceed the occupational exposure limit (OEL).
 - (C) They are not included in the SDS.

- (D) They are difficult to store.
2. Why does Lisa want to update the safety data sheet (SDS)?
- (A) To change supplier details
 - (B) To improve production efficiency
 - (C) To reflect new risks and precautions
 - (D) To meet customer demands
3. What safety measure do they discuss for minimizing airborne contaminants?
- (A) Using fume hood ventilation
 - (B) Increasing chemical usage
 - (C) Reducing PPE requirements
 - (D) Changing lab schedules
4. What does Mark plan to do at the end of the conversation?
- (A) Conduct additional experiments
 - (B) File a complaint about safety violations
 - (C) Compile a report and share findings
 - (D) Order new lab equipment
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Part 3: Key Vocabulary

- **Toxicology analysis** – 毒性分析
- **Safety data sheet (SDS)** – 安全データシート
- **Personal protective equipment (PPE)** – 個人用保護具
- **Occupational exposure limit (OEL)** – 職業暴露限界

- **Fume hood ventilation** – 排気フード換気
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Part 4: Answer Key

1. What issue does Mark mention about some chemicals?
☒ (B) They exceed the occupational exposure limit (OEL).
2. Why does Lisa want to update the safety data sheet (SDS)?
☒ (C) To reflect new risks and precautions.
3. What safety measure do they discuss for minimizing airborne contaminants?
☒ (A) Using fume hood ventilation.
4. What does Mark plan to do at the end of the conversation?
☒ (C) Compile a report and share findings.