# Material substitution: hydrogen mixture replaced with pure hydrogen

Table 10-9

In this final example, a nonflammable hydrogen mixture was replaced with pure hydrogen and an explosion resulted. This incident highlights the need for an effective management of change procedure.

| **Division:**  **Chemistry** | | **Description of Operation: Glove box use of nonflammable hydrogen mixture** | | | **By:**  **Date:** |
| --- | --- | --- | --- | --- | --- |
| **What if?** | **Answer** | | **Probability** | **Consequences** | **Recommendations** |
| Hydrogen mixture is replaced with pure hydrogen | Ignition of explosive mixture possible if experimental design is not appropriate for use of a flammable gas mixture | | Moderate | Severe | Assure appropriate management of change procedures are in place to re-evaluate setup for flammable gas use |

This file is excerpted from “Identifying and Evaluating Hazards in Research Laboratories: Guidelines developed by the Hazard Identification and Evaluation Task Force of the American Chemical Society’s Committee on Chemical Safety”.

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