

Part V

Hydrogen Safety

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Hydrogen degrades the tensile and fatigue properties of many metallic materials. This phenomenon is known as hydrogen embrittlement (HE). In general, high-strength materials are severely degraded by hydrogen. Many studies on HE have been performed. However, the mechanism of HE has not yet been clarified. High-pressure hydrogen exposure also degrades rubber materials because of decompression failure. In Part V of this book, the fundamental principles and recent progress regarding hydrogen safety in terms of hydrogen interaction of materials are reviewed. The effect of hydrogen on fretting fatigue is also reviewed in terms of practical importance. Moreover, hydrogen gas safety management and hydrogen safety in practice are reviewed.