



# Safe Design and Operation of Process Vents and Emission Control Systems

By Center for Chemical Process Safety (CCPS)

Wiley-AIChE, 2006. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface. Acknowledgment. 1. Introduction. 1.1 Objective. 1.2 Relationship to Other CCPS Publications. 1.3 Industries and Operations Covered. 1.4 Intended Audience. 1.5 How to Use this Book. 1.6 References. 2. Management Overview. 2.1 Impact on Vent Header Systems. 3. Normal Process and Emergency Systems. 3.1 Types of Vent Header Systems. 3.1.1 Normal Process Vent Header Systems. 3.1.2 Emergency Vent Header Systems. 3.1.3 Combined Vent Header Systems. 3.1.4 Considerations. 3.2 Design Philosophy. 3.2.1 Design Sequence. 3.2.2 Hazards Associated with Combining Vent Streams. 3.2.3 Inherent Safety. 3.2.4 Flammability and Combustibility. 3.2.5 Toxicity. 3.2.6 Reactivity. 3.2.7 Regulatory Issues. 3.3 Reference. 4. Combustion and Flammability. 4.1 Flammable Limits. 4.1.1 Mixture Stoichiometry. 4.1.2 Factors Influencing Flammable Limits. 4.1.3 Flammable Limit Variability. 4.1.4 Effects of Temperature on Flammable Limits. 4.1.5 Effects of Pressure on Flammable Limits. 4.1.6 Flammable Limits of Combined Gas Streams. 4.1.7 Cool Flame. 4.1.8 Hybrid Mixtures. 4.2 Limiting Oxidant Concentration. 4.3 Deflagrations. 4.4 Pressure Piling. 4.5 Detonation Phenomena. 4.5.1 Deflagration to Detonation Transition (DDT) and Run-Up Distance. 4.5.2 Overdriven and Stable Detonations. 4.5.3 Detonation Cell Size. 4.6 References. 5. Understanding Requirements. 5.1 Understanding the Sources. 5.1.1 Identify Vent...

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