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Nota di contenuto	Explosive Boiling of Superheated Cryogenic Liquids; Foreword; Contents; Preface; 1 Introduction; 2 Equilibrium, Stability, and Metastability; 2.1 Types of Equilibria: Stability Criteria; 2.2 Boundary of Essential Instability; 2.3 Elements of Statistical Theory; 2.4 Phase Stability Against Finite Perturbations; 2.5 Critical Heterophase Fluctuations; 2.6 Relaxation Processes in Metastable Phases; 2.7 Dynamics of Heterophase Fluctuations; 2.8 Kinetic Nucleation Theory (Multiparameter Version); 2.9 Approximations and Limitations of Classical Nucleation Theory 2.10 Nucleation at a High Degree of Metastability 2.11 Nucleation Bypassing the Saddle Point; 2.12 Some Comments on Nucleation Theory; 3 Attainable Superheating of One-Component Liquids; 3.1 Two Approaches to the Determination of the Work of Formation of a Critical Bubble; 3.2 Boiling-Up Kinetics of Superheated Liquids; 3.3 Elements of the Stochastic Theory of Nucleation; 3.4 Experimental Procedures in the

Analysis of Boiling in Superheated Liquids; 3.5 Quasistatic Methods of Investigating Limiting Superheatings of Liquids; 3.6 Dynamic Methods of Investigating Explosive Boiling-Up of Liquids
 3.7 Results of Experiments on Classical Liquids 3.8 Superheating of Quantum Liquids; 3.9 Surface Tension of Vapor Nuclei; 3.10 Cavitation Strength of Cryogenic Liquids; 3.11 Attainable Superheating of Liquid Argon at Negative Pressures; 3.12 Initiated Nucleation; 3.13 Heterogeneous Nucleation; 4 Nucleation in Solutions of Liquefied Gases; 4.1 Critical Nucleus and the Work of its Formation; 4.2 Theory of Nucleation in Binary Solutions; 4.3 Attainable Superheating of Solutions of Hydrocarbons; 4.4 Methods of Experimentation on Solutions of Cryogenic Liquids
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Sommario/riassunto

The monograph is devoted to the description of the kinetics of spontaneous boiling of superheated liquefied gases and their solutions. Experimental results are given on the temperature of accessible superheating, the limits of tensile strength of liquids due to processes of cavitation and the rates of nucleation of classical and quantum liquids. The kinetics of evolution of the gas phase is studied in detail for solutions of cryogenic liquids and gas-saturated fluids. The properties of the critical clusters (bubbles of critical sizes) of the newly evolving gas phase are analyzed for initial st