1.	Record Nr.	UNINA9910808787103321
	Titolo	Rheology : theory and applications. Volume I / / editor, Frederick R. Eirich
	Pubbl/distr/stampa	New York : , : Academic Press Inc., Publishers, , 1956
	ISBN	1-299-39870-7 0-323-14259-1
	Descrizione fisica	1 online resource (778 pages)
	Altri autori (Persone)	EirichF. R <1905-2005.> (Frederick Roland)
	Disciplina	531.382
	Soggetti	Rheology
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and indexes.
	Nota di contenuto	 Front Cover; Rheology: Theory and Applications; Copyright Page; Preface; Contributors to Volume I; Table of Contents; Chapter 1. Introduction; Chapter 2. Phenomenological Macrorheology; I. Introduction; II. Traction and Stress; III. Deformation; IV. The Classical Ideal Bodies; V. Second-Order Effects in Elasticity and Viscosity; VI. Complex Bodies; VII. Energy Considerations; VIII. Variability of Rheological Coefficients; IX. Volume Rheology; Nomenclature; Chapter 3. Finite Plastic Deformation; I. Introduction; II. Flow of Perfectly Plastic Solids; III. Flow of Work-Hardening Plastic Solids IV. Flow of Visco-Plastic Solids Nomenclature; Chapter 4. Stress-Strain Relations in the Plastic Range of Metals-Experiments and Basic Concepts; I. Introduction; II. Experiments on Yielding; III. The Yield Function as a Loading Function; IV. Significance of the Loading Function; V. Experimental Evidence Requiring a General Approach; VI. Fundamental Mechanical-Thermodynamic Consideration; VII. Some Basic Experiences; VIII. Remarks; Nomenclature; Chapter 5. Mechanical Properties and Imperfections in Crystals; I. Introduction; II. Imperfect of Imperfections on Mechanical Properties Nomenclature; Chapter 6. Dislocations in Crystal Lattices; I. General Considerations; II. Dislocations in Particular Lattices; III. Interactions between Dislocations; Nomenclature; Chapter 7. Mechanical Properties of Metals; I. Introduction; II. Nature of the Grain Boundary; III. Elastic Properties of

	 Polycrystalline Materials; IV. Internal Friction; V. Plastic Properties of Metals; VI. Work-Hardening of Metals; General Bibliography; Nomenclature; Chapter 8. Some Rheological Properties Under High Pressure; I. Introduction II. Techniques and Basic Principles of Measurements III. Viscosity of Fluids; IV. Plasticity; Nomenclature; Chapter 9. Theories of Viscosity; I. Introduction; II. Molecular Theory of Liquids; III. The Rate of Process Theory of Flow; IV. Diffusion Methods; V. Comparison of the Formulas; VI. Effects of Molecular Structure; Nomenclature; Chapter 10. Large Elastic Deformations; I. Introduction; II. Kinematics of Finite Deformation; III. The Strain-Energy Function; IV. The Strain-Energy Function for Small but Finite Deformations; V. Fundamental Mechanical Considerations VI. The Solution of Problems Involving Large Elastic Deformations; VIII. The Superposition of Small Deformations of Large Deformations; VIII. The Solution of Problems in Second-Order Elasticity Theory; IX.
	Experimental Verification of the Theory; Nomenclature; Chapter 11. Dynamics of Viscoelastic Behavior; I. Introduction; II. Properties of Viscoelastic Materials; III. Properties of Viscoelastic Objects when the Distributed Inertia of the Medium is Neglected; IV. Vibrations and Waves in Viscoelastic Objects; V. The Kinetic Theory of Rubber Elasticity; Nomenclature; Chapter 12. Viscosity Relationships for Polymers in Bulk and in Concentrated Solution
Sommario/riassunto	Rheology V1